

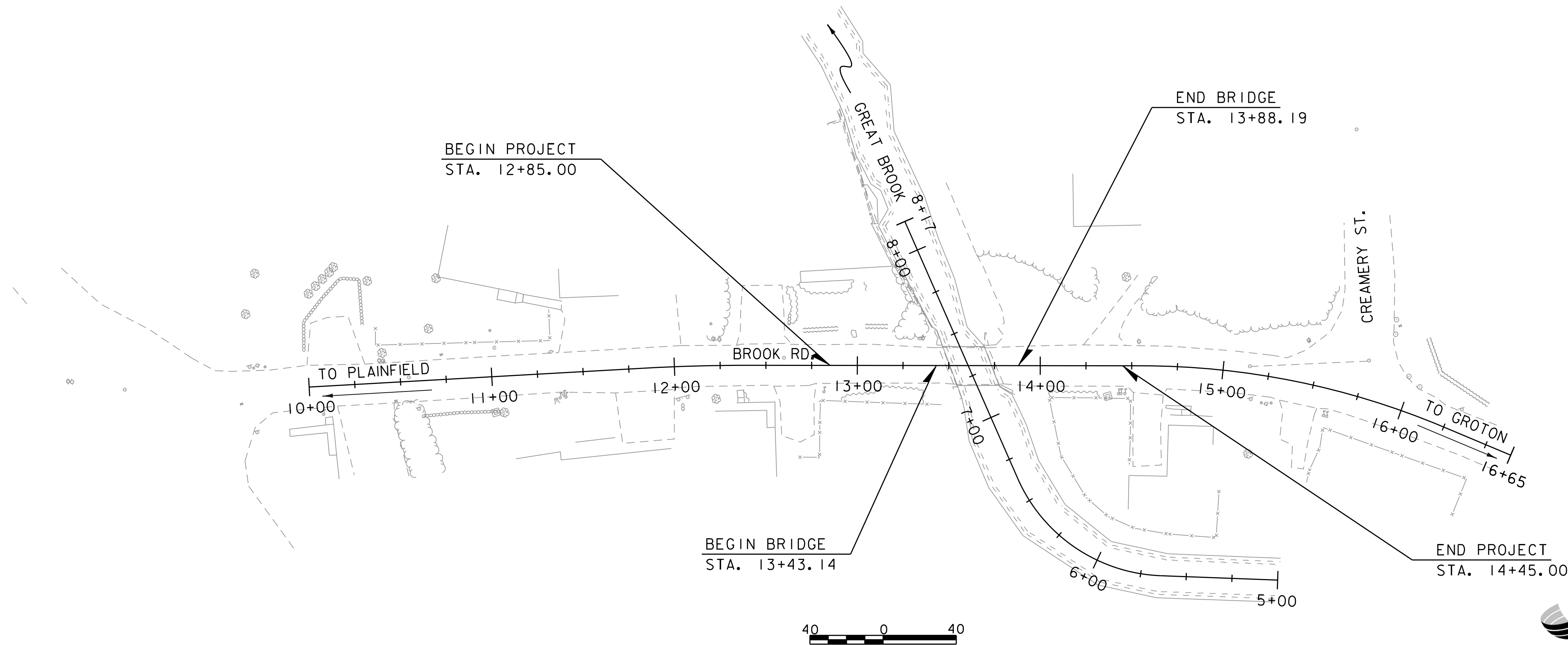
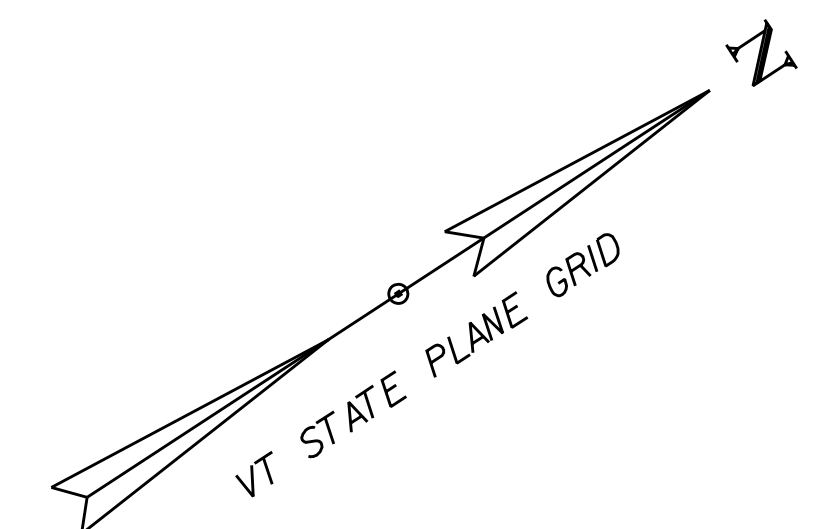
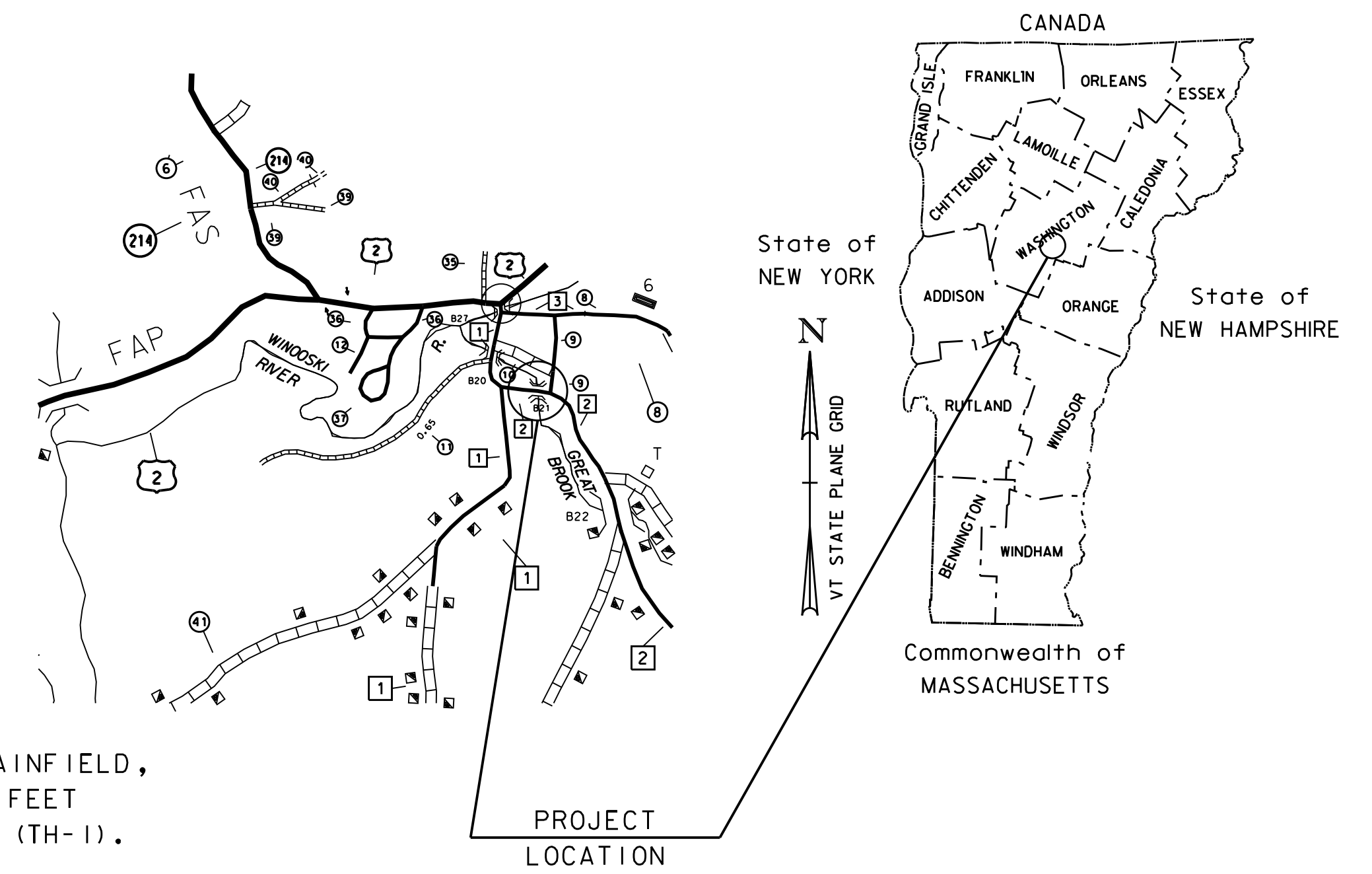
TOWN OF PLAINFIELD COUNTY OF WASHINGTON PROPOSED IMPROVEMENT BRIDGE PROJECT

TH-2 BROOK ROAD (CLASS 2 MINOR COLLECTOR)

PROJECT LOCATION: LOCATED IN THE COUNTY OF WASHINGTON, IN THE TOWN OF PLAINFIELD, ON BROOK ROAD, OVER THE GREAT BROOK; APPROXIMATELY 450 FEET EAST OF THE INTERSECTION OF BROOK ROAD AND MILL STREET (TH-1).

PROJECT DESCRIPTION: WORK TO BE PERFORMED UNDER THIS PROJECT INCLUDES THE REMOVAL AND REPLACEMENT OF THE EXISTING BRIDGE WITH A BRIDGE ON THE EXISTING ALIGNMENT, WITH ASSOCIATED ROADWAY AND CHANNEL WORK.

LENGTH OF STRUCTURE: 45.05 FEET
 LENGTH OF ROADWAY: 114.95 FEET
 LENGTH OF PROJECT: 160.00 FEET



**FINAL PLANS
JANUARY 2021**

PROJECT MANAGER : JASON D. KEENER, PE
 PROJECT NAME : BROOK ROAD BRIDGE
 PROJECT NUMBER : 58223.00
 SHEET 1 OF 38 SHEETS



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E-10 ROLLED EROSION CONTROL PRODUCT, TYPE I 04-07-2020
 E-12 STABILIZED CONSTRUCTION ENTRANCE 04-07-2020
 E-15 SILT FENCE 04-07-2020
 E-121 STANDARD SIGN PLACEMENT - CONVENTIONAL ROAD 08-08-1995
 G-1 STEEL BEAM GUARDRAIL DETAILS (POST, DELINEATOR, TYPICALS) 03-10-2017
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 S-352A BRIDGE RAILING, GALVANIZED STEEL TUBING/CONCRETE COMBINATION 04-07-2020
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 S-352C BRIDGE RAILING, GALVANIZED STEEL TUBING/CONCRETE COMBINATION 04-07-2020
 S-352D GUARDRAIL APPROACH SECTION TO CONCRETE COMBINATION BRIDGE RAILING, TL-3 04-07-2020
 S-400 BRIDGE JOINT ASPHALTIC PLUG 04-07-2020
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 S-501 CONCRETE DETAILS AND NOTES 04-07-2020
 T-1 TRAFFIC CONTROL GENERAL NOTES 04-25-2016
 T-10 CONVENTIONAL ROADS CONSTRUCTION APPROACH SIGNING 08-06-2012
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 T-35 CONSTRUCTION ZONE LONGITUDINAL DROP-OFFS 08-06-2012

HIGHWAY SAFETY DESIGN DETAILS

HSD-400.01 SAFETY EDGE DETAILS 01-05-2018

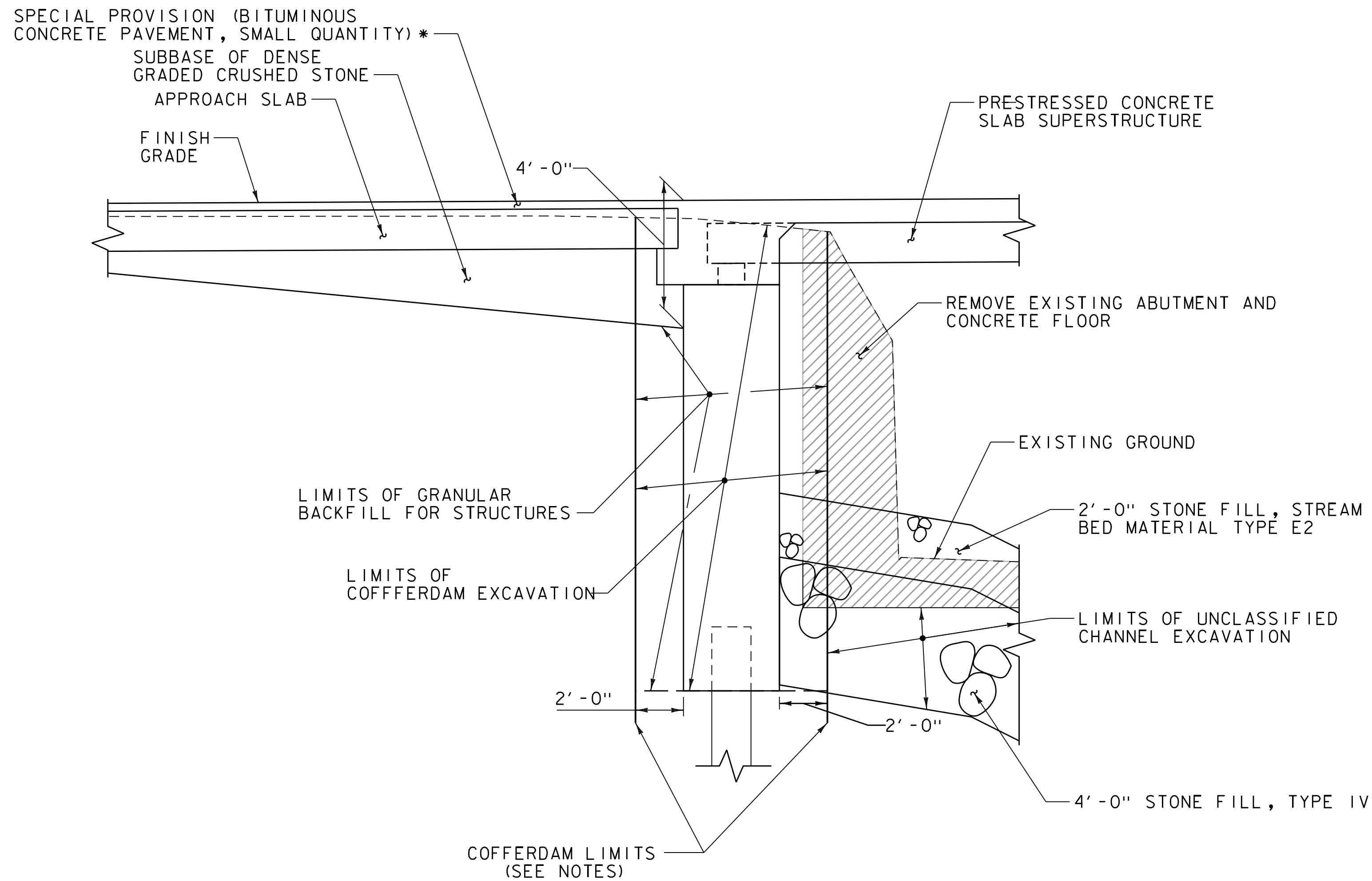
LRFR LOAD RATING FACTORS							
LOADING LEVELS	TRUCK						
	H-20	HL-93	3S2	6 AXLE	3A. STR.	4A. STR.	5A. SEMI
TONNAGE	20	36	36	66	30	34.5	38
INVENTORY	1.85	1.16					
POSTING							
OPERATING	3.29	2.06	1.10	1.5	1.57	1.01	1.37
COMMENTS:							

DESIGN VALUES	
1. DESIGN LIVE LOAD	HL-93
2. FUTURE PAVEMENT	d _p : 3 INCH
3. DESIGN SPAN	L: 41.50 FT
4. MIN. MID-SPAN POS. CAMBER @ RELEASE (PRESTRESSED UNITS)	Δ: ---
5. PRESTRESSING STRAND	f _y : 270 KSI
6. PRESTRESSED CONCRETE STRENGTH	f _c : 5.0 KSI
7. PRESTRESSED CONCRETE RELEASE STRENGTH	f _{ci} : 4.0 KSI
8. HIGH PERFORMANCE CONCRETE, CLASS A	f _c : 4.0 KSI
9. HIGH PERFORMANCE CONCRETE, CLASS B	f _c : 3.5 KSI
10. REINFORCING STEEL	f _y : 60 KSI
11. STRUCTURAL STEEL AASHTO M270	f _y : 50 KSI
12. NOMINAL BEARING RESISTANCE OF SOIL	q _n : ---
13. SOIL BEARING RESISTANCE FACTOR	φ: ---
14. NOMINAL BEARING RESISTANCE OF ROCK	q _n : ---
15. ROCK BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	φ: ---
16. PILE RESISTANCE FACTOR	φ: ---
17. LATERAL PILE DEFLECTION	Δ: ---
18. BASIC WIND SPEED	V _{3s} : ---
19. MINIMUM GROUND SNOW LOAD	p _g : ---
20. SEISMIC DATA	S _s : --- S ₁ : ---

PROJECT NAME: BROOK ROAD BRIDGE
 PROJECT NUMBER: 58223.00

FILE NAME: 58223.00_index.dgn PLOT DATE: 1/6/2021
 PROJECT LEADER: J.D. KEENER DRAWN BY: J.D. KEENER
 DESIGNED BY: VHB CHECKED BY: S.E. BURBANK
 INDEX OF SHEETS SHEET 2 OF 38

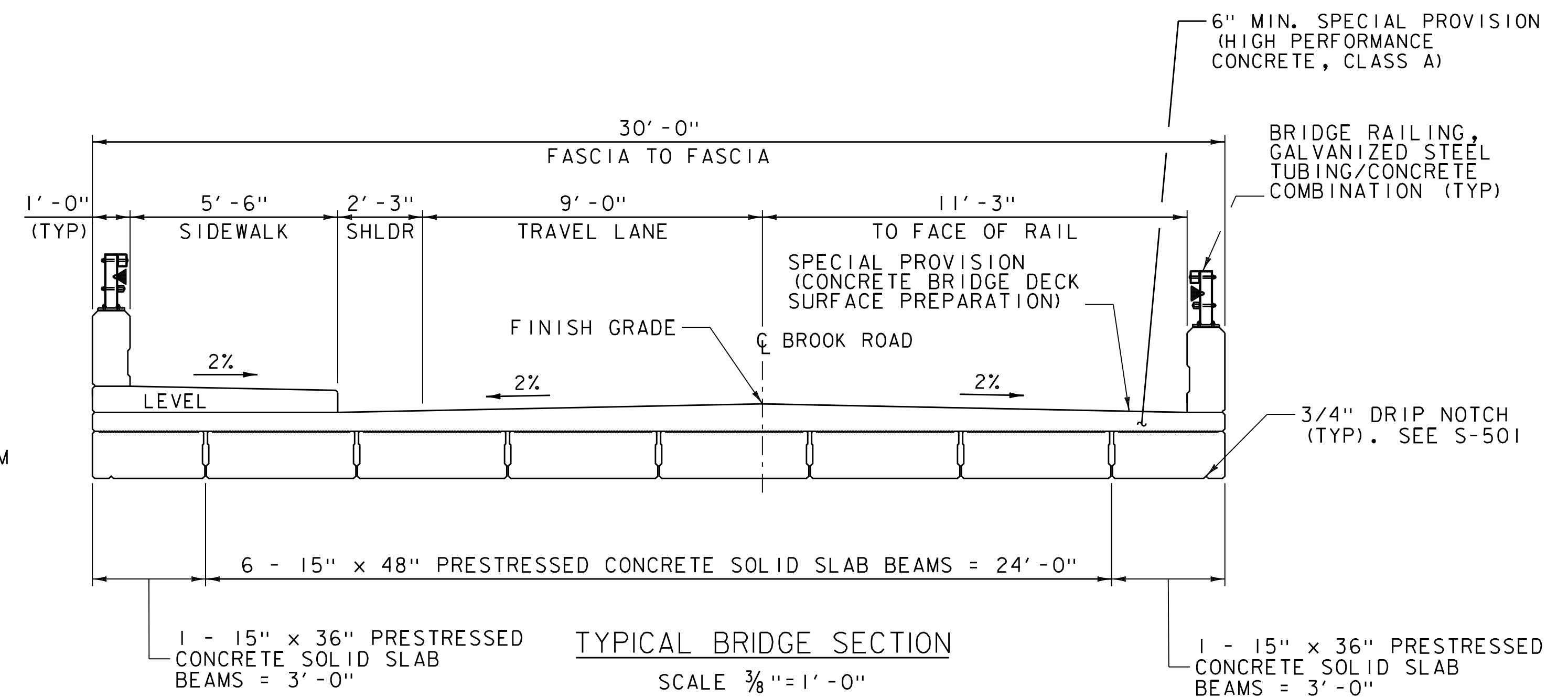




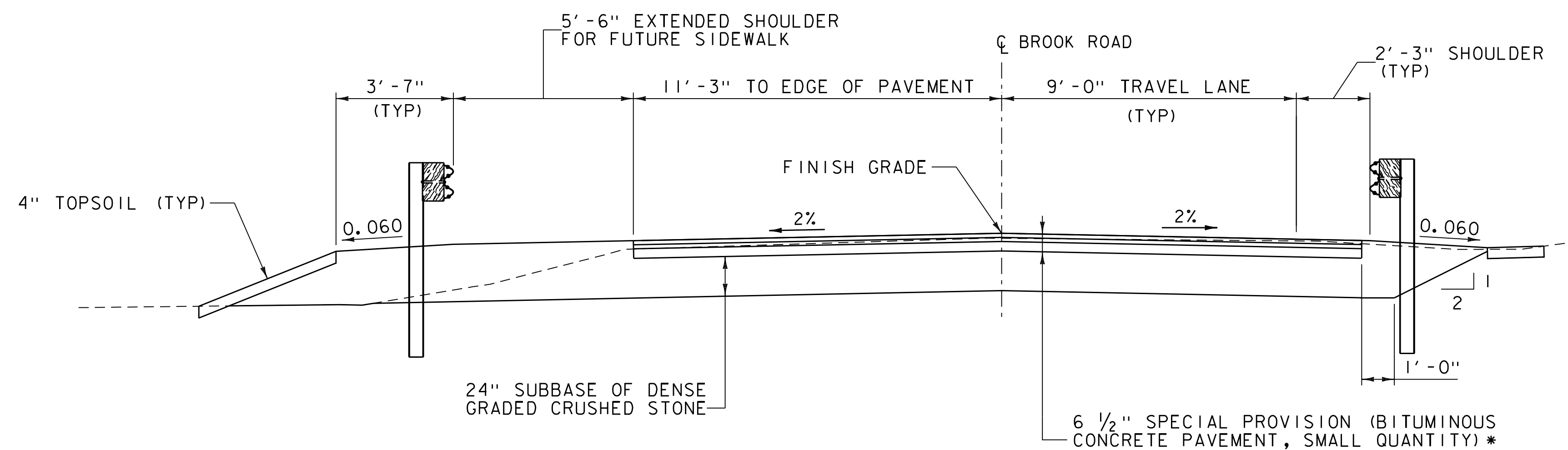
ABUTMENT EARTHWORK SECTION
NOT TO SCALE

NOTES:

1. ALL NECESSARY EXCAVATION AND REMOVAL OF EXISTING STRUCTURE WITHIN THE DEFINED LIMITS OF THE COFFERDAM WILL BE PAID FOR UNDER ITEM 208.35 "COFFERDAM EXCAVATION, ROCK."
2. EXCAVATION FOR AND THE REMOVAL OF ANY PORTION OF THE EXISTING STRUCTURE WHICH FALLS OUTSIDE THE LIMITS OF THE EXCAVATION ITEMS WILL BE PAID FOR UNDER ITEM 529.15 "REMOVAL OF STRUCTURE" AND NOT UNDER OTHER EXCAVATION ITEMS.
3. THE CONTRACTOR IS TO DETERMINE THE COFFERDAM SIZE, HOWEVER COFFERDAM EXCAVATION WILL ONLY BE PAID TO THE LIMITS SHOWN. THE PAY LIMITS OF ITEM 208.30 "COFFERDAM EXCAVATION, EARTH" AND ITEM 208.35 "COFFERDAM EXCAVATION, ROCK" SHALL BE 2 FEET OUTSIDE THE PERIMETER OF THE ABUTMENTS AND WINGWALLS.
4. IF THE CONSTRUCTED COFFERDAM IS LARGER THAN THE COFFERDAM EXCAVATION PAY LIMITS, THE UNCLASSIFIED CHANNEL EXCAVATION REQUIRED FOR PLACEMENT OF STREAMBED ARMORING, INCLUDING THE PORTION WHICH IS INSIDE THE COFFERDAM BUT OUTSIDE THE COFFERDAM EXCAVATION PAY LIMITS, WILL BE PAID FOR UNDER ITEM 203.27 "UNCLASSIFIED CHANNEL EXCAVATION."



TYPICAL BRIDGE SECTION
SCALE 3/8" = 1'-0"



TYPICAL ROADWAY SECTION
SCALE 3/8" = 1'-0"

- - (2) - 1/2" LIFTS OF TYPE IVS OVER
- (1) - 3/2" LIFT OF TYPE IIS
- ** SEE CROSS SECTIONS FOR SIDE SLOPES

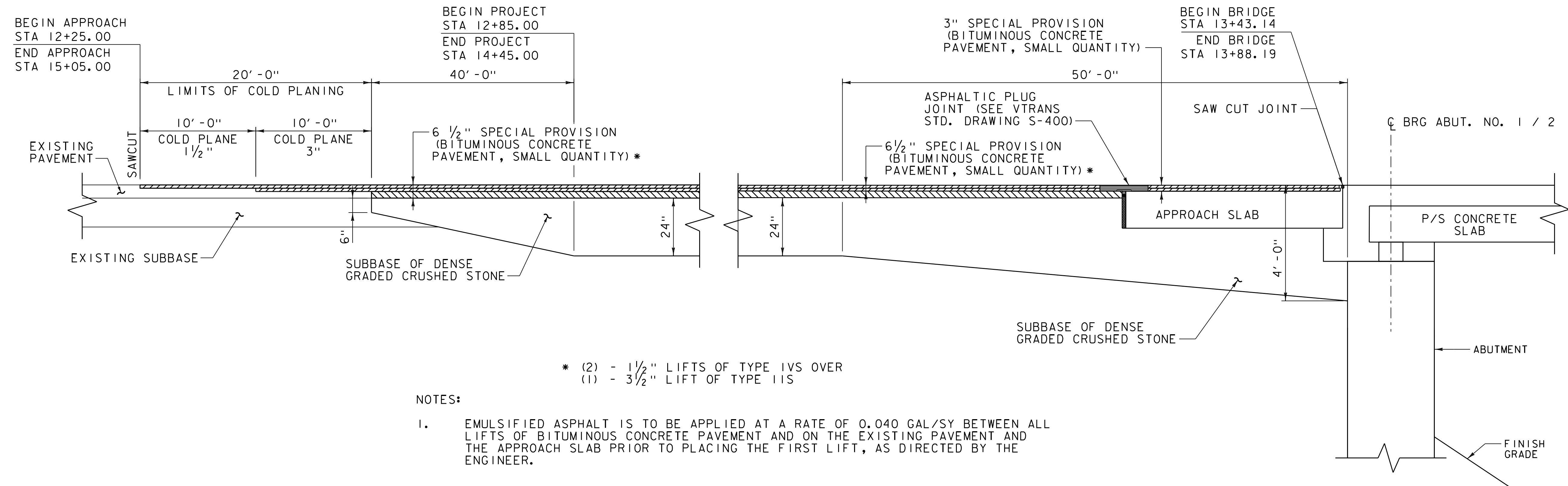
MATERIAL TOLERANCES (IF USED ON PROJECT)	
SURFACE	
- PAVEMENT (TOTAL THICKNESS)	+/- 1/4"
- AGGREGATE SURFACE COURSE	+/- 1/2"
SUBBASE	+/- 1"
SAND BORROW	+/- 1"



PROJECT NAME: BROOK ROAD BRIDGE
PROJECT NUMBER: 58223.00

FILE NAME: 58223.00_TYP.dgn
PROJECT LEADER: J.D. KEENER
DESIGNED BY: J.D. KEENER
TYPICAL SECTIONS (10 OF 2)

PLOT DATE: 1/6/2021
DRAWN BY: J.D. KEENER
CHECKED BY: R.H. BARNES
SHEET 3 OF 38

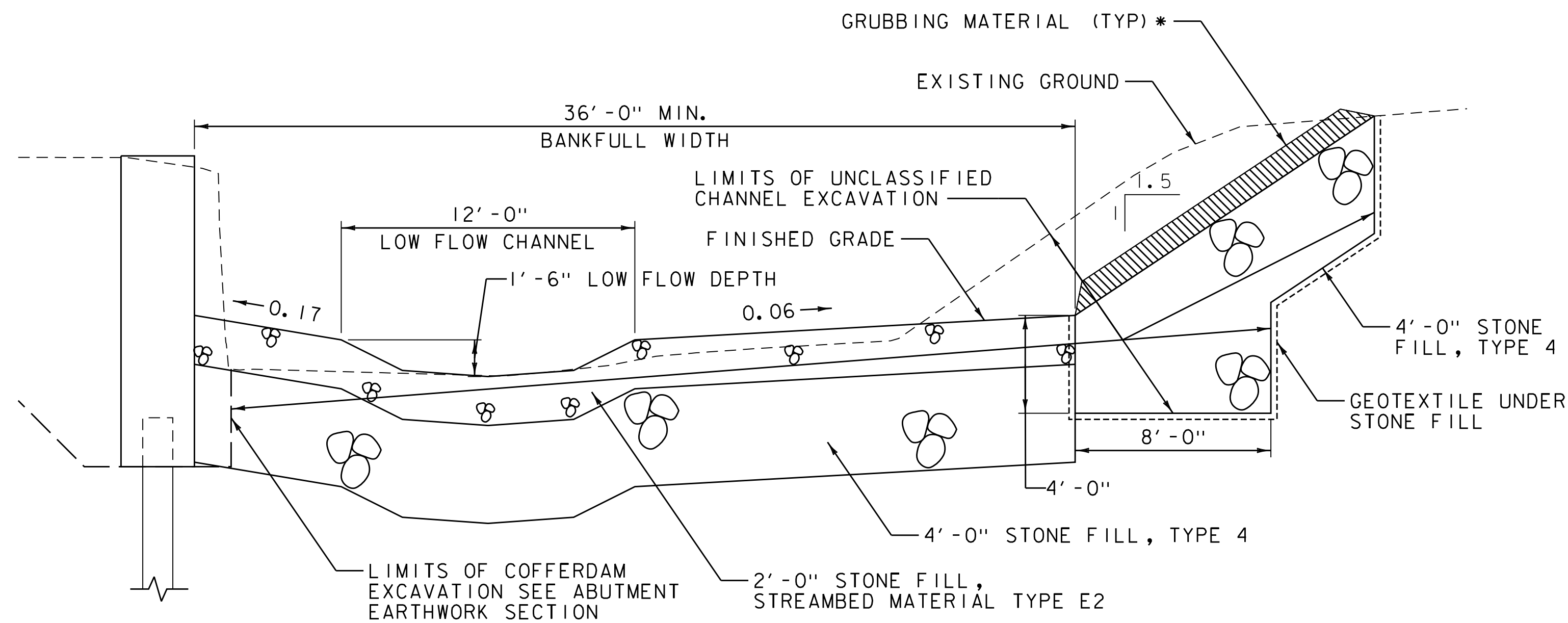


* (2) - 1 1/2" LIFTS OF TYPE IVS OVER
 (1) - 3 1/2" LIFT OF TYPE IIS

NOTES:

- EMULSIFIED ASPHALT IS TO BE APPLIED AT A RATE OF 0.040 GAL/SY BETWEEN ALL LIFTS OF BITUMINOUS CONCRETE PAVEMENT AND ON THE EXISTING PAVEMENT AND THE APPROACH SLAB PRIOR TO PLACING THE FIRST LIFT, AS DIRECTED BY THE ENGINEER.

BEGIN/END APPROACH SECTION
 NOT TO SCALE



* GRUBBING MATERIAL SHALL NOT BE PLACED ON STONE FILL WITHIN 3' OF THE FACE OF THE ABUTMENTS UNDER THE BRIDGE. WHENEVER CHANNEL SLOPE INTERSECTS ROADWAY SUBBASE, GRUBBING MATERIAL SHALL BEGIN AT THE BOTTOM OF SUBBASE

TYPICAL CHANNEL SECTION
 SCALE 1/4" = 1' - 0"

PROJECT NAME:	BROOK ROAD BRIDGE
PROJECT NUMBER:	58223.00
FILE NAME:	58223.00_TYP.dgn
PROJECT LEADER:	J.D. KEENER
DESIGNED BY:	J.D. KEENER
TYPICAL SECTIONS (2 OF 2)	
PLOT DATE:	1/6/2021
DRAWN BY:	J.D. KEENER
CHECKED BY:	R.H. BARNES
SHEET	4 OF 38



PROJECT NOTES

GENERAL

- ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE STATE OF VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 2018, AND ITS LATEST REVISIONS, AND THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 7TH EDITION, AND ITS LATEST REVISIONS.
- ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL, AND ARE GIVEN AT 68 DEGREES FAHRENHEIT, UNLESS NOTED OTHERWISE.
- THE BRIDGE IS DESIGNED FOR HL-93 LIVE LOAD WITH A 3.0 INCH ALLOWANCE FOR FUTURE PAVEMENT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING CONSISTENCY BETWEEN THE FABRICATOR'S SHOP DRAWINGS OF RELATED COMPONENTS AND ENSURING THE FIT-UP OF ALL COMPONENTS. FABRICATION DRAWINGS SHALL SHOW RELATED COMPONENTS AND INDICATE AS SUCH.
- ALL PRECAST/PRESTRESSED CONCRETE ELEMENTS SHALL BE FABRICATED TO THE SPECIFIED DIMENSIONS AND ERECTED IN THE SPECIFIED LOCATIONS, ALL WITHIN TOLERANCES DEFINED ON THE PLANS AND IN THE PRECAST/PRESTRESSED CONCRETE INSTITUTE TOLERANCE MANUAL FOR PRECAST AND PRESTRESSED CONCRETE CONSTRUCTION, MNL 135-00, AND ITS LATEST REVISIONS.
- THE EXISTING BRIDGE SHALL BE REMOVED IN ITS ENTIRETY AND SHALL BECOME THE PROPERTY OF THE CONTRACTOR. THE REMOVAL OF THE EXISTING BRIDGE WILL BE PAID FOR UNDER ITEM 529.15, "REMOVAL OF STRUCTURE (615 SF - EST.)". THIS WORK WILL INCLUDE THE COMPLETE REMOVAL AND DISPOSAL OF THE EXISTING CONCRETE SUPERSTRUCTURE, CONCRETE ABUTMENTS, INCLUDING ALL WINGWALLS AND FOOTINGS, CONCRETE FLOOR BETWEEN ABUTMENTS, AND EXCAVATION TO THE LIMITS SHOWN IN THE PLANS THAT FALL OUTSIDE THE LIMITS COVERED BY THE CONTRACT EXCAVATION ITEMS.
- THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL AERIAL UTILITIES AND POLES PRIOR TO THE STARTING WORK. SOME UTILITIES HAVE BEEN RELOCATED DURING THE PREPARATION OF THE CONTRACT DOCUMENTS AND THE CONTRACTOR WILL NEED TO COORDINATE WITH ALL UTILITY OWNERS TO CONFIRM ACTUAL LOCATION PRIOR TO CONSTRUCTION.
- PER THE STREAM ALTERATIONS PERMIT THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING AN ON-SITE PRE-CONSTRUCTION MEETING WITH THE RIVER MANAGEMENT ENGINEER (RME) PRIOR TO COMMENCEMENT OF ANY IN-STREAM WORK. ALL COSTS ASSOCIATED WITH THE COORDINATION WITH THE RME AND PRE-CONSTRUCTION MEETING SHALL BE CONSIDERED INCIDENTAL TO ALL CONTRACT ITEMS.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONTROL AND MAINTAIN FLOWS OF THE GREAT BROOK THROUGHOUT CONSTRUCTION. ALL COSTS ASSOCIATED WITH THE CONTROL OF THE GREAT BROOK SHALL BE CONSIDERED INCIDENTAL TO ITEM 529.15 "REMOVAL OF STRUCTURE (615 SF - EST.)".

TRAFFIC CONTROL

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND IMPLEMENTATION OF A SITE-SPECIFIC TRAFFIC CONTROL PLAN FOR ALL STAGES OF CONSTRUCTION. THE CONTRACTOR SHALL SUBMIT A DETAILED TRAFFIC CONTROL PLAN FOR ALL STAGES OF CONSTRUCTION FOR APPROVAL. ALL COSTS WILL BE INCLUDED IN ITEM 641.11, "TRAFFIC CONTROL, ALL-INCLUSIVE".
- DURING CONSTRUCTION, TRAFFIC SHALL BE MAINTAINED BY USE OF AN OFF-SITE DETOUR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DESIGN AND IMPLEMENTATION OF THE OFF-SITE DETOUR AND THESE DETAILS SHALL BE INCLUDED IN THE SUBMITTED TRAFFIC CONTROL PLAN. THE SIGNED DETOUR SHALL DIVERT TRAFFIC AROUND THE ROAD CLOSURE ON BROOK ROAD USING CREAMERY STREET, MAIN STREET, AND MILL STREET. ALL COSTS FOR THE DESIGN AND IMPLEMENTATION OF THE OFF-SITE DETOUR WILL BE INCLUDED IN ITEM 641.11, "TRAFFIC CONTROL, ALL-INCLUSIVE".
- DURING THE CLOSURE PERIOD, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING CLOSURE SIGNAGE IN ACCORDANCE WITH THE LATEST EDITION OF THE MUTCD AND VTRANS STANDARDS.
- UNLESS COVERED UNDER INDIVIDUAL PAY ITEMS OR NOTED OTHERWISE, ALL COSTS FOR TEMPORARY TRAFFIC CONTROL DEVICES WILL BE CONSIDERED TO BE INCLUDED IN THE CONTRACT LUMP SUM PRICE FOR TRAFFIC CONTROL, ITEM 641.11, "TRAFFIC CONTROL, ALL-INCLUSIVE". THIS INCLUDES BUT IS NOT LIMITED TO THE FOLLOWING ITEMS:
 - TEMPORARY TRAFFIC BARRIERS
 - RETROREFLECTIVE DRUMS
 - TYPE III BARRICADES
 - SIGNS
 - SIGN POSTSTEMPORARY TRAFFIC BARRIERS SHALL BE FURNISHED IN ACCORDANCE WITH SECTION 621
- PAYMENT FOR FLAGGERS WILL BE MADE UNDER ITEM 630.15, "FLAGGERS". PAYMENT FOR PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS) WILL BE MADE UNDER ITEM 641.15, "PORTABLE CHANGEABLE MESSAGE SIGN".

- THE CONTRACTOR SHALL REVIEW AND USE "THE VERMONT BICYCLE AND PEDESTRIAN WORK ZONE TRAFFIC CONTROL GUIDE". AVAILABLE ON THE VTRANS WEBSITE, TO INCORPORATE THE APPLICABLE BICYCLE AND PEDESTRIAN TRAFFIC CONTROL INTO THEIR SITE-SPECIFIC TRAFFIC CONTROL PLAN FOR ALL STAGES OF CONSTRUCTION.
- THE CONTRACTOR SHALL NOTIFY THE TOWN AND RESIDENTS WITHIN THE PROJECT LIMITS REGARDING THE ROAD CLOSURE IN ACCORDANCE WITH THE PROJECT SPECIAL PROVISIONS.
- FULL ACCESS TO ALL SIDE ROADS AND DRIVES WITHIN THE PROJECT LIMITS SHALL BE MAINTAINED AT ALL TIMES. THIS WORK WILL BE CONSIDERED INCIDENTAL TO ITEM 641.11, "TRAFFIC CONTROL, ALL-INCLUSIVE".
- ALL SIGNS SHALL BE IN ACCORDANCE WITH THE 2009 EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD), AND ITS LATEST REVISIONS AND THE 2004 EDITION OF THE "STANDARD HIGHWAY SIGNS AND MARKINGS" BOOK (SHSM), AND ITS 2012 SUPPLEMENT, PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION (FHWA).

EARTHWORK

- STONE FILL SHALL BE PLACED IN FRONT OF THE ABUTMENTS BEFORE THE NEW SLABS ARE SET, AS SHOWN ON THE PLANS.
- TO LIMIT DEFLECTION OF THE PILE CAP PRIOR TO PLACEMENT OF CONCRETE FOR THE OVERLAY, BACKWALL AND WINGWALL CAPS, THE DIFFERENCE IN BACKFILL ELEVATION ON THE FRONT AND BACK SIDES OF THE PILE CAP SHALL BE LIMITED TO 3'-0". FOLLOWING CURING OF THE OVERLAY, BACKWALL AND WINGWALL CAP CONCRETE, BACKFILL MAY BE PLACED TO BOTTOM OF SUBBASE MATERIAL, AND SUBBASE MATERIAL MAY BE PLACED.

CONCRETE

- CONCRETE USED FOR THE APPROACH SLABS AND SUBSTRUCTURES, UP TO THE PILE CAP AND WINGWALL CONSTRUCTION JOINTS, SHALL BE ITEM 900.608, "SPECIAL PROVISION (CONCRETE, HIGH PERFORMANCE CLASS B)(FPQ)".
- CONCRETE USED FOR THE STRUCTURAL OVERLAY, BACKWALLS AND WINGWALLS, ABOVE THE CONSTRUCTION JOINT, SHALL BE ITEM 900.608, "SPECIAL PROVISION (CONCRETE, HIGH PERFORMANCE CLASS A)(FPQ)". CONCRETE FOR THE STRUCTURAL OVERLAY, BACKWALLS AND WINGWALLS, ABOVE THE CONSTRUCTION JOINT, SHALL BE PLACED IN ONE CONTINUOUS OPERATION, WITH NO COLD JOINTS, BEGINNING AT THE LOW END OF THE BRIDGE.
- ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 3/4" x 3/4" UNLESS OTHERWISE NOTED.
- ITEM 514.10, "WATER REPELLENT, SILANE", SHALL BE APPLIED TO ALL EXPOSED CONCRETE ON THE BRIDGE SUPERSTRUCTURE AND SUBSTRUCTURE EXCEPT THE UNDERSIDE OF THE DECK BETWEEN DRIP NOTCHES.
- JOINTS AND SCORE MARKS IN CONCRETE SHALL BE CONSTRUCTED AS INDICATED ON THE PLANS OR AS DIRECTED BY THE RESIDENT ENGINEER.

REINFORCING STEEL

- ALL REINFORCING USED IN THE APPROACH SLABS, ABUTMENTS, AND WINGWALLS, BELOW THE CONSTRUCTION JOINT, SHALL MEET THE REQUIREMENTS FOR LEVEL I (PLAIN) CORROSION RESISTANCE IN ACCORDANCE WITH SECTION 507. PAYMENT FOR REINFORCING STEEL USED IN THE ABUTMENTS AND WINGWALLS, BELOW THE CONSTRUCTION JOINT, WILL BE MADE UNDER ITEM 507.11 "REINFORCING STEEL, LEVEL I (PLAIN)".
- ALL REINFORCING USED IN THE STRUCTURAL OVERLAY, BACKWALLS AND WINGWALLS, ABOVE THE CONSTRUCTION JOINT, INCLUDING ANY REINFORCEMENT EMBEDDED IN THE ABUTMENT AND WINGWALL AND EXTENDING ABOVE THE CONSTRUCTION JOINT, SHALL MEET THE REQUIREMENTS FOR LEVEL I (EPOXY COATED) CORROSION RESISTANCE IN ACCORDANCE WITH SECTION 507. PAYMENT FOR REINFORCING STEEL USED IN THE STRUCTURAL OVERLAY, BACKWALLS AND WINGWALLS, ABOVE THE CONSTRUCTION JOINT, INCLUDING ANY REINFORCEMENT EMBEDDED IN THE ABUTMENT AND WINGWALL AND EXTENDING ABOVE THE CONSTRUCTION JOINT, WILL BE MADE UNDER ITEM 507.11 "REINFORCING STEEL, LEVEL I (EPOXY COATED)".
- ALL REINFORCING STEEL SHALL BE DETAILED AND FABRICATED USING PROCEDURES AND TOLERANCES IN ACCORDANCE WITH APPLICABLE PUBLICATIONS OF THE CONCRETE REINFORCING STEEL INSTITUTE (CRSI).
- TEST BARS SHALL BE PROVIDED IN ACCORDANCE WITH THE "VERMONT AGENCY OF TRANSPORTATION MATERIAL SAMPLING MANUAL" AVAILABLE ON THE AGENCY WEBSITE. ALL COSTS ASSOCIATED WITH PROVIDING BARS FOR TESTING WILL BE INCLUDED IN THE UNIT BID PRICE FOR THE APPROPRIATE REINFORCING STEEL OR PRECAST CONCRETE ITEM.
- MINIMUM COVER FOR REINFORCING STEEL SHALL BE 2" ALONG THE BACK FACES OF WALLS AGAINST EARTH AND 3" ELSEWHERE, UNLESS OTHERWISE NOTED. MINIMUM COVER FOR REINFORCING STEEL FOR PRESTRESSED SOLID SLABS SHALL BE AS SHOWN ON SUPERSTRUCTURE DETAILS SHEETS.

H-PILES

- ABUTMENT PILES
 - THE PILES SHALL BE HP 12x63.
 - THE PILES SHALL BE DRIVEN TO A NOMINAL PILE DRIVING RESISTANCE (RNDR) OF 323 KIPS, PROVIDED A MINIMUM PENETRATION OF 25.0 FEET BELOW THE BOTTOM OF PILE CAP HAS BEEN ACHIEVED.
- A MINIMUM OF ONE DYNAMIC TEST PER ABUTMENT IS REQUIRED DURING PILE INSTALLATION. PAYMENT WILL BE MADE UNDER ITEM 505.45, "DYNAMIC PILE LOADING TEST".
- THE TOPS OF THE PILES AFTER INSTALLATION SHALL NOT VARY FROM THE POSITION SHOWN ON THE PLANS BY MORE THAN 3 INCHES. THE PILE ORIENTATION SHALL NOT VARY BY MORE THAN 5 DEGREES. THE CONTRACTOR SHALL DEMONSTRATE TO THE SATISFACTION OF THE ENGINEER HOW THE TOLERANCES WILL BE MET. THESE MEASURES SHALL BE DEMONSTRATED IN A SUBMITTAL TO BE ACCEPTED BEFORE PILE DRIVING COMMENCES.
- FOR ESTIMATING PURPOSES, THE PILE TIP ELEVATIONS WERE ASSUMED AS SHOWN ON THE BORING LOGS. THE ACTUAL IN PLACE LENGTHS MAY VARY.

PRESTRESSED SOLID SLABS

- DESIGN VALUES
 - CONCRETE COMPRESSIVE STRENGTH: $f'_c = 5.0$ KSI
 - CONCRETE COMPRESSIVE STRENGTH AT RELEASE: $f'_{ci} = 4$ KSI
 - PRESTRESSING STRANDS: 0.6 INCH DIAMETER, 270 KSI, LOW RELAXATION 7-WIRE STRANDS
 - JACKING FORCE PER PRESTRESSING STRAND: 44 KIPS
 - POST-TENSIONING STRANDS: 0.5 INCH DIAMETER, 270 KSI, LOW RELAXATION 7-WIRE STRANDS
 - JACKING FORCE PER POST-TENSIONING STRAND: 33 KIPS
 - THERE SHALL BE 3 STRANDS PER POST TENSIONING DUCT.
 - ASSUMED MODULUS OF ELASTICITY FOR THE STRAND IS 28,500 KSI.
- ALL PRESTRESSED SOLID SLABS SHALL HAVE THE PRESTRESSING STRANDS EXTENDED AND BENT AS SHOWN ON SUPERSTRUCTURE DETAILS SHEETS.
- ALL REINFORCING USED IN THE PRESTRESSED SOLID SLABS SHALL MEET THE REQUIREMENTS FOR LEVEL I (EPOXY COATED) CORROSION RESISTANCE IN ACCORDANCE WITH SECTION 507. PAYMENT FOR ALL REINFORCING STEEL USED IN PRESTRESSED SOLID SLABS WILL BE INCLUDED UNDER EITHER ITEM 510.25, "PRESTRESSED CONCRETE SOLID SLABS (15" X 48") OR ITEM 510.25, "PRESTRESSED CONCRETE SOLID SLABS (15" X 36)".
- THE CONTRACTOR SHALL SUBMIT AN ERECTION PLAN IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS A MINIMUM OF 30 WORKING DAYS PRIOR TO THE BRIDGE CLOSURE PERIOD. UNDER NO CIRCUMSTANCES SHALL A BRIDGE CLOSURE BEGIN PRIOR TO HAVING AN ACCEPTED ERECTION PLAN.
- CUTTING AND REPAIRING DAMAGED AREAS OF COATED REINFORCING STEEL SHALL BE PERFORMED IN ACCORDANCE WITH SUBSECTION 507.04.
- ALL POST TENSIONING STRANDS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 510-PRESTRESSED CONCRETE. PAYMENT FOR GLAVANIZED ANCHOR ASSEMBLIES, DUCTS, POST TENSIONING STRANDS AND ANY OTHER MATERIALS AND LABOR REQUIRED TO COMPLETE THE POST TENSIONING WILL BE INCLUDED UNDER EITHER ITEM 510.25, "PRESTRESSED CONCRETE SOLID SLABS (15" X 48") OR ITEM 510.25, "PRESTRESSED CONCRETE SOLID SLABS (15" X 36)".
- POST TENSIONING STRANDS SHALL BE INSTALLED AND TENSIONED TO 3 KIPS TO REMOVE THE SAG PRIOR TO PLACEMENT OF THE GROUT FOR THE SHEAR KEYS.
- SHEAR KEYS SHALL BE GROUTED AND ALLOWED TO REACH A MINIMUM COMPRESSIVE STRENGTH OF 1500 PSI PRIOR TO FULLY POST TENSIONING TRANSVERSE TENDONS.
- GROUTING OF SHEAR KEYS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 510 - PRESTRESSED CONCRETE. PAYMENT FOR SURFACE PREPARATION, GROUT, BACKER ROD, AND ANY OTHER MATERIALS AND LABOR REQUIRED TO COMPLETE THE GROUTING WILL BE INCLUDED UNDER ITEM 510.24 "GROUTING SHEAR KEYS"
- TRANSVERSE POST TENSIONING SHALL BE COMPLETED SYMETRICALLY FOR TRANSVERSE LINES CLOSER TO THE ABUTMENTS PRIOR TO LINES CLOSER TO MID-SPAN.
- THE CONTRACTOR SHALL BLANKET DIAMOND GRIND THE CONCRETE BRIDGE DECK TO PROVIDE UNIFORM TRANSVERSE AND LONGITUDINAL SLOPE AND A TEXTURED DRIVING SURFACE ALONG THE BRIDGE. THIS WORK SHALL BE DONE IN ACCORDANCE WITH THE SPECIAL PROVISIONS AND UNDER NO CIRCUMSTANCES SHALL THE GRINDING EXCEED 0.5 INCHES IN DEPTH. ALL COSTS ASSOCIATED WITH GRINDING OF THE DECK WILL BE INCLUDED UNDER ITEM 900.670, "SPECIAL PROVISION (CONCRETE BRIDGE DECK SURFACE PREPARATION)".

PROJECT NAME: BROOK ROAD BRIDGE

PROJECT NUMBER: 58223.00

FILE NAME: 58223.00pn.dgn

PROJECT LEADER: J.D. KEENER

DESIGNED BY: J.D. KEENER

PROJECT NOTES SHEET

PLOT DATE: 1/6/2021

DRAWN BY: N.A. TRUSLOW

CHECKED BY: S.E. BURBANK

SHEET 5 OF 38



QUANTITY SHEET 1

SUMMARY OF ESTIMATED QUANTITIES										TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES			
								ROADWAY	EROSION CONTROL	BRIDGE	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
								1			1		LS	CLEARING AND GRUBBING, INCLUDING INDIVIDUAL TREES AND STUMPS	201.10				EARTHWORKS SUMMARY
								490			490		CY	COMMON EXCAVATION	203.15				
								700			700		CY	UNCLASSIFIED CHANNEL EXCAVATION	203.27				
								1			1		CY	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)	204.22				
										370	370		CY	GRANULAR BACKFILL FOR STRUCTURES	204.30				
										450	450		CY	COFFERDAM EXCAVATION, EARTH	208.30				
										80	80		CY	COFFERDAM EXCAVATION, ROCK	208.35				
										1	1		LS	COFFERDAM (ABUTMENT 1)	208.40				
										1	1		LS	COFFERDAM (ABUTMENT 2)	208.40				
								110			110		SY	COARSE-MILLING, BITUMINOUS PAVEMENT	210.10				
								500			500		CY	SUBBASE OF DENSE GRADED CRUSHED STONE	301.35				
								6			6		CWT	EMULSIFIED ASPHALT	404.65				
										1	1		LS	FURNISHING EQUIPMENT FOR DRIVING PILING	504.10				
										650	650		LF	STEEL PILING, HP 12 X 84	505.165				
										3	3		EACH	DYNAMIC PILE LOADING TEST	505.45				
										11500	11500		LB	REINFORCING STEEL, LEVEL I (EPOXY COATED)	507.11				
										20500	20500		LB	REINFORCING STEEL, LEVEL I (PLAIN)	507.11				
										320	320		LF	GROUTING SHEAR KEYS	510.24				
										95	95		LF	PRESTRESSED CONCRETE SOLID SLABS (15" X 36")	510.25				
										275	275		LF	PRESTRESSED CONCRETE SOLID SLABS (15" X 48")	510.25				
										25	25		GAL	WATER REPELLENT, SILANE	514.10				
										50	50		LF	BRIDGE EXPANSION JOINT, ASPHALTIC PLUG	516.10				
										90	90		LF	BRIDGE RAILING, GALVANIZED STEEL TUBING/CONCRETE COMBINATION	525.45				
										1	1		EACH	REMOVAL OF STRUCTURE (615 SF - EST.)	529.15				
								2			2		EACH	CHANGING ELEVATION OF DROP INLETS, CATCH BASINS, OR MANHOLES	604.40				
										200	200		CY	STONE FILL, STREAM BED MATERIAL TYPE E2	613.06				
										630	630		CY	STONE FILL, TYPE IV	613.13				
								60			60		LF	CAST-IN-PLACE CONCRETE CURB, TYPE B	616.28				
								3			3		EACH	REMOVE AND RESET MAILBOX, SINGLE SUPPORT	617.10				
								110			110		LF	STEEL BEAM GUARDRAIL, GALVANIZED	621.20				
								4			4		EACH	ANCHOR FOR STEEL BEAM RAIL	621.60				
								4			4		EACH	GUARDRAIL APPROACH SECTION TO CONC COMB BRIDGE RAILING TL-3	621.748				
								80			80		HR	FLAGGERS	630.15				
										1	1		LS	MOBILIZATION/DEMobilIZATION	635.11				
								1			1		LS	TRAFFIC CONTROL, ALL-INCLUSIVE	641.11				
								3			3		EACH	PORTABLE CHANGEABLE MESSAGE SIGN	641.15				
								560			560		LF	DURABLE 4 INCH YELLOWLINE, POLYUREA	646.414				
										290	290		SY	GEOTEXTILE UNDER STONE FILL	649.31				
									20		20		LB	SEED	651.15				
									80		80		LB	FERTILIZER	651.18				

PROJECT NAME: BROOK ROAD BRIDGE	
PROJECT NUMBER: 58223.00	
FILE NAME: 58223.00_05.dgn	PLOT DATE: 1/6/2021
PROJECT LEADER: J.D. KEENER	DRAWN BY: J.D. KEENER
DESIGNED BY: J.D. KEENER	CHECKED BY: R.H. BARNES
QUANTITY SHEET (1 OF 2)	SHEET 6 OF 38



QUANTITY SHEET 2

SUMMARY OF ESTIMATED QUANTITIES										TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES			
								ROADWAY	EROSION CONTROL	BRIDGE	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
									0.5		0.5		TON	AGRICULTURAL LIMESTONE	651.20				
									90		90		CY	TOPSOIL	651.35				
									150		150		SY	GRUBBING MATERIAL (12" DEPTH)	651.40				
									1		1		LS	EPSC PLAN	653.01				
									80		80		HR	MONITORING EPSC PLAN	653.02				
									1		1		LU	MAINTENANCE OF EPSC PLAN (N.A.B.I.)	653.03				
									0.5		0.5		TON	HAY MULCH	653.10				
									140		140		SY	ROLLED EROSION CONTROL PRODUCT, TYPE I	653.20				
									30		30		CY	STABILIZED CONSTRUCTION ENTRANCE	653.35				
									1		1		EACH	INLET PROTECTION DEVICE, TYPE I	653.40				
									2		2		EACH	FILTER BAG	653.45				
									390		390		LF	SILT FENCE, TYPE II	653.476				
									530		530		LF	PROJECT DEMARCATION FENCE	653.55				
										40	40		CY	SPECIAL PROVISION (CONCRETE, HIGH PERFORMANCE CLASS A)	900.608				
										210	210		CY	SPECIAL PROVISION (CONCRETE, HIGH PERFORMANCE CLASS B)	900.608				
										1360	1360		SF	SPECIAL PROVISION (CONCRETE BRIDGE DECK SURFACE PREPARATION)	900.670				
								170			170		TON	SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)	900.680				

PROJECT NAME: BROOK ROAD BRIDGE PROJECT NUMBER: 58223.00	FILE NAME: 58223.00_05.dgn PROJECT LEADER: J.D. KEENER DESIGNED BY: J.D. KEENER QUANTITY SHEET (2 OF 2)
PLOT DATE: 1/6/2021 DRAWN BY: J.D. KEENER CHECKED BY: R.H. BARNES SHEET 7 OF 38	



GENERAL INFORMATION

SYMBOLGY LEGEND NOTE

THE SYMBOLGY ON THIS SHEET IS INTENDED TO COVER STANDARD CONVENTIONAL SYMBOLGY. THE SYMBOLGY IS USED FOR EXISTING & PROPOSED FEATURES WITH HEAVIER LINEWEIGHT, IN COMBINATION WITH PROJECT ANNOTATION, AS NOTED ON PROJECT PLAN SHEETS. THIS LEGEND SHEET COVERS THE BASICS. SYMBOLGY ON PLANS MAY VARY, PLAN ANNOTATIONS AND NOTES SHOULD BE USED TO CLARIFY AS NEEDED.

R.O.W. ABBREVIATIONS (CODES) & SYMBOLS

POINT CODE	DESCRIPTION
BF	BARRIER FENCE
CH	CHANNEL EASEMENT
CONST	CONSTRUCTION EASEMENT
CUL	CULVERT EASEMENT
D&C	DISCONNECT & CONNECT
DIT	DITCH EASEMENT
DR	DRAINAGE EASEMENT
DRIVE	DRIVEWAY EASEMENT
EC	EROSION CONTROL
HWY	HIGHWAY EASEMENT
I&M	INSTALL & MAINTAIN EASEMENT
LAND	LANDSCAPE EASEMENT
PDF	PROJECT DEMARCATION FENCE
R&RES	REMOVE & RESET
R&REP	REMOVE & REPLACE
R.T.& I.	RIGHT, TITLE, AND INTEREST
SR	SLOPE RIGHT
UE	UTILITY EASEMENT
(P)	PERMANENT EASEMENT
(T)	TEMPORARY EASEMENT
■	BNDNS BOUND SET
□	BNDNS BOUND TO BE SET
⊙	IPNF IRON PIN FOUND
●	IPNS IRON PIN TO BE SET
⊠	CALC EXISTING ROW POINT
○	PROW PROPOSED ROW POINT
[LENGTH]	LENGTH CARRIED ON NEXT SHEET

COMMON TOPOGRAPHIC POINT SYMBOLS

POINT CODE	DESCRIPTION
⊕	APL BOUND APPARENT LOCATION
◻	BM BENCHMARK
◻	BND BOUND
□	CB CATCH BASIN
⊕	COMB COMBINATION POLE
□	DITHR DROP INLET THROATED DNC
⊕	EL ELECTRIC POWER POLE
◊	FPOLE FLAGPOLE
○	GASFIL GAS FILLER
○	GP GUIDE POST
×	GSO GAS SHUT OFF
◊	GUY GUY POLE
◊	GUYW GUY WIRE
×	GV GATE VALVE
⊕	H TREE HARDWOOD
△	HCTRL CONTROL HORIZONTAL
△	HVCTRL CONTROL HORIZ. & VERTICAL
◇	HYD HYDRANT
◊	IP IRON PIN
●	IPIPE IRON PIPE
⊕	LI LIGHT - STREET OR YARD
⊕	MB MAILBOX
○	MH MANHOLE (MH)
◻	MM MILE MARKER
◻	PM PARKING METER
◻	PMK PROJECT MARKER
◊	POST POST STONE/WOOD
⊕	RRSIG RAILROAD SIGNAL
⊕	RRSL RAILROAD SWITCH LEVER
⊕	S TREE SOFTWOOD
⊕	SAT SATELLITE DISH
⊕	SHRUB SHRUB
⊕	SIGN SIGN
⊕	STUMP STUMP
⊕	TEL TELEPHONE POLE
◊	TIE TIE
⊕	TSIGN SIGN W/DOUBLE POST
⊕	VCTRL CONTROL VERTICAL
◊	WELL WELL
×	WSO WATER SHUT OFF

THESE ARE COMMON VAOT SURVEY POINT SYMBOLS FOR EXISTING FEATURES, ALSO USED FOR PROPOSED FEATURES WITH HEAVIER LINEWEIGHT, IN COMBINATION WITH PROPOSED ANNOTATION.

PROPOSED GEOMETRY CODES

CODE	DESCRIPTION
PC	POINT OF CURVATURE
PI	POINT OF INTERSECTION
CC	CENTER OF CURVE
PT	POINT OF TANGENCY
PCC	POINT OF COMPOUND CURVE
PRC	POINT OF REVERSE CURVE
POB	POINT OF BEGINNING
POE	POINT OF ENDING
STA	STATION PREFIX
AH	AHEAD STATION SUFFIX
BK	BACK STATION SUFFIX
D	CURVE DEGREE OF (100FT)
R	CURVE RADIUS OF
T	CURVE TANGENT LENGTH
L	CURVE LENGTH OF
E	CURVE EXTERNAL DISTANCE
CB	CHORD BEARING

UTILITY SYMBOLGY

UNDERGROUND UTILITIES

— UT —	UTILITY (GENERIC-UNKNOWN)
— UE —	TELEPHONE
— UE —	ELECTRIC
— UC —	CABLE (TV)
— UEC —	ELECTRIC+CABLE
— UET —	ELECTRIC+TELEPHONE
— UCT —	CABLE+TELEPHONE
— UECT —	ELECTRIC+CABLE+TELEPHONE
— G —	GAS LINE
— W —	WATER LINE
— S —	SANITARY SEWER (SEPTIC)

ABOVE GROUND UTILITIES (AERIAL)

— T —	UTILITY (GENERIC-UNKNOWN)
— E —	TELEPHONE
— C —	CABLE (TV)
— EC —	ELECTRIC+CABLE
— ET —	ELECTRIC+TELEPHONE
— AER E&T —	ELECTRIC+TELEPHONE
— CT —	CABLE+TELEPHONE
— ECT —	ELECTRIC+CABLE+TELEPHONE
—	UTILITY POLE GUY WIRE

PROJECT CONSTRUCTION SYMBOLGY

PROJECT DESIGN & LAYOUT SYMBOLGY

— CZ —	CLEAR ZONE
—	PLAN LAYOUT MATCHLINE

PROJECT CONSTRUCTION FEATURES

—	TOP OF CUT SLOPE
—	TOE OF FILL SLOPE
⊗ ⊗ ⊗ ⊗ ⊗	STONE FILL
—	BOTTOM OF DITCH
—	CULVERT PROPOSED
—	STRUCTURE SUBSURFACE
PDF — PDF	PROJECT DEMARCATION FENCE
BF — BF	BARRIER FENCE
XXXXXXXXXXXXXXXXXXXX	TREE PROTECTION ZONE (TPZ)
////	STRIPING LINE REMOVAL
~~~~	SHEET PILES

**CONVENTIONAL BOUNDARY SYMBOLGY**

**BOUNDARY LINES**

— TOWN LINE —	TOWN BOUNDARY LINE
— COUNTY LINE —	COUNTY BOUNDARY LINE
— STATE LINE —	STATE BOUNDARY LINE
—	PROPOSED STATE R.O.W. (LIMITED ACCESS)
—	PROPOSED STATE R.O.W.
—	STATE ROW (LIMITED ACCESS)
—	STATE ROW
—	TOWN ROW
—	PERMANENT EASEMENT LINE (P)
—	TEMPORARY EASEMENT LINE (T)
—	SURVEY LINE
P — P	PROPERTY LINE (P/L)
L — L	PROPERTY LINE (P/L)
SR — SR — SR	SLOPE RIGHTS
6f — 6f	6F PROPERTY BOUNDARY
4f — 4f	4F PROPERTY BOUNDARY
HAZ — HAZ	HAZARDOUS WASTE

**EPSC LAYOUT PLAN SYMBOLGY**

**EPSC MEASURES**

ONNOONNOONNO	FILTER CURTAIN
—	SILT FENCE, TYPE I
—	SILT FENCE, TYPE II
—	CHECK DAM
—	DISTURBED AREAS REQUIRING RE-VEGETATION
—	EROSION MATTING

SEE EPSC DETAIL SHEETS FOR ADDITIONAL SYMBOLGY

**ENVIRONMENTAL RESOURCES**

—	WETLAND BOUNDARY
—	RIPARIAN BUFFER ZONE
—	WETLAND BUFFER ZONE
—	SOIL TYPE BOUNDARY
— T&E —	THREATENED & ENDANGERED SPECIES
HAZ — HAZ	HAZARDOUS WASTE AREA
AG —	AGRICULTURAL LAND
HABITAT —	FISH & WILDLIFE HABITAT
FLOOD PLAIN —	FLOOD PLAIN
OHW —	ORDINARY HIGH WATER (OHW)
—	STORM WATER
—	USDA FOREST SERVICE LANDS
—	WILDLIFE HABITAT SUIT/CONN

**ARCHEOLOGICAL & HISTORIC**

— ARCH —	ARCHEOLOGICAL BOUNDARY
— HISTORIC DIST —	HISTORIC DISTRICT BOUNDARY
— HISTORIC —	HISTORIC AREA
(H)	HISTORIC STRUCTURE

**CONVENTIONAL TOPOGRAPHIC SYMBOLGY**

**EXISTING FEATURES**

—	ROAD EDGE PAVEMENT
—	ROAD EDGE GRAVEL
—	DRIVEWAY EDGE
—	DITCH
—	FOUNDATION
—	FENCE (EXISTING)
—	FENCE WOOD POST
—	FENCE STEEL POST
—	GARDEN
—	ROAD GUARDRAIL
—	RAILROAD TRACKS
—	CULVERT (EXISTING)
—	STONE WALL
—	WALL
—	WOOD LINE
—	BRUSH LINE
—	HEDGE
—	BODY OF WATER EDGE
—	LEDGE EXPOSED

PROJECT NAME: BROOK ROAD BRIDGE

PROJECT NUMBER: 58223

FILE NAME: 58223.00_legend.dgn  
PROJECT LEADER: J.D. KEENER  
DESIGNED BY: VTRANS  
CONVENTIONAL SYMBOLGY LEGEND

PLOT DATE: 1/6/2021  
DRAWN BY: VTRANS  
CHECKED BY: J.D. KEENER  
SHEET 8 OF 38

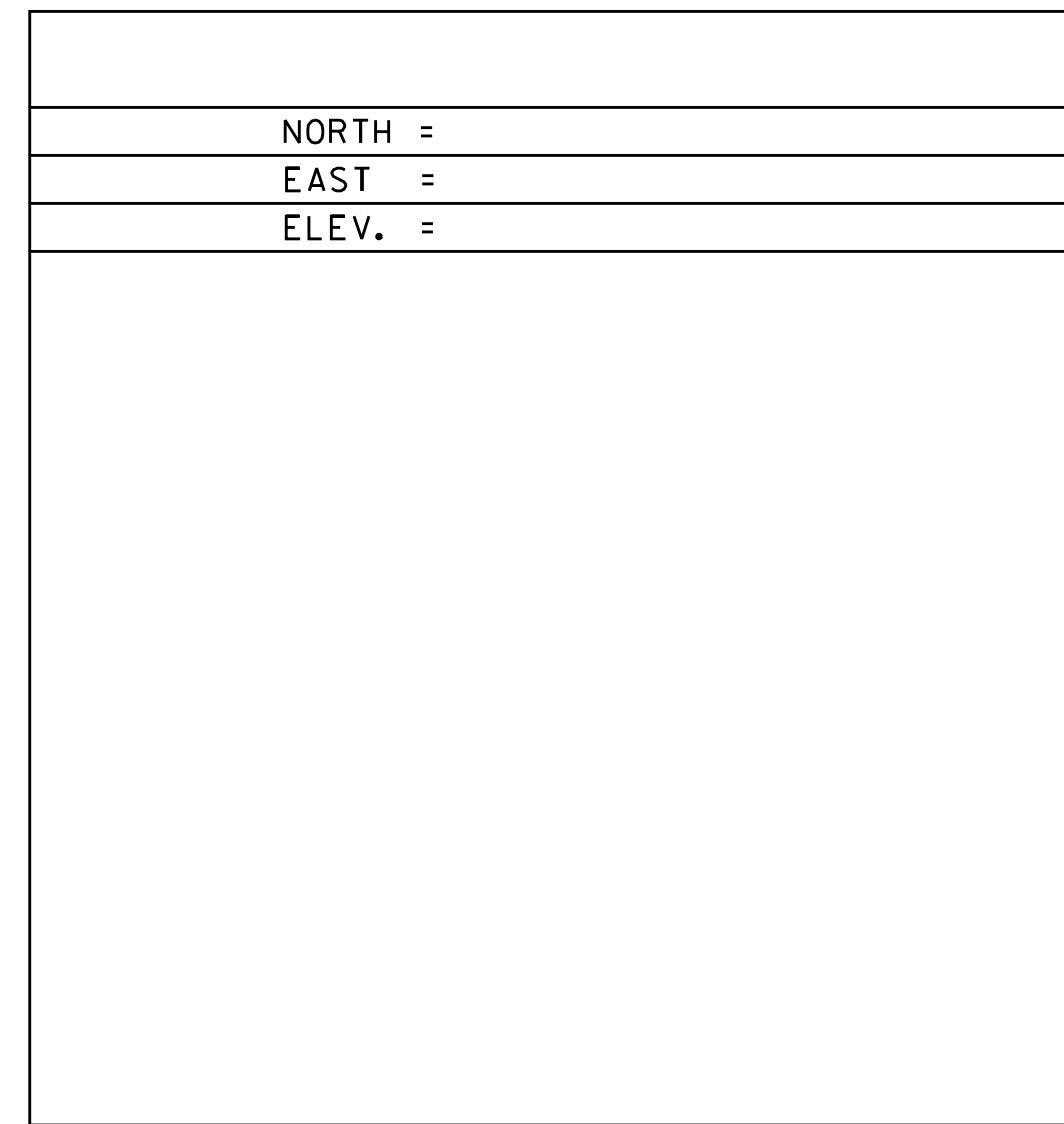
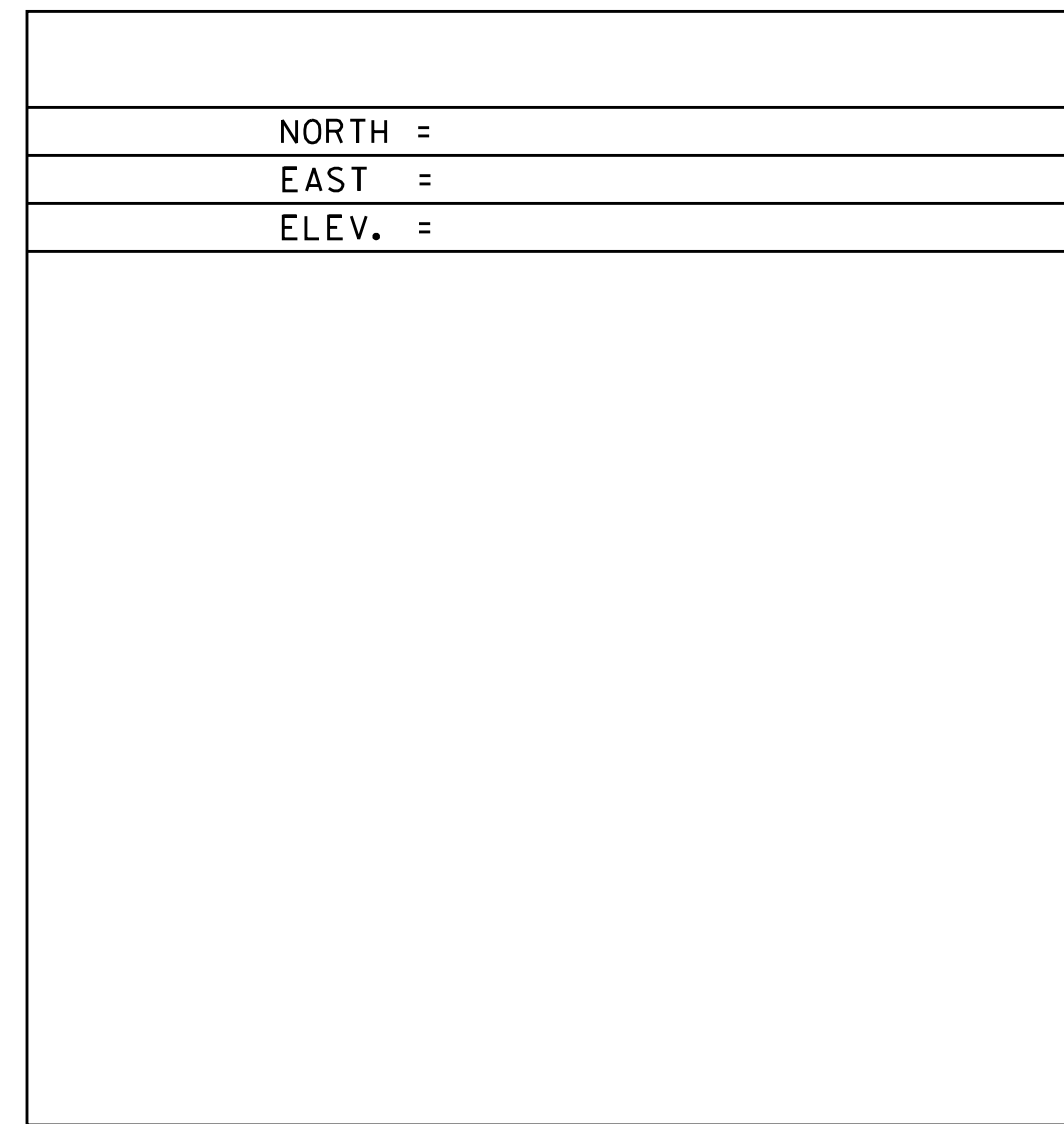
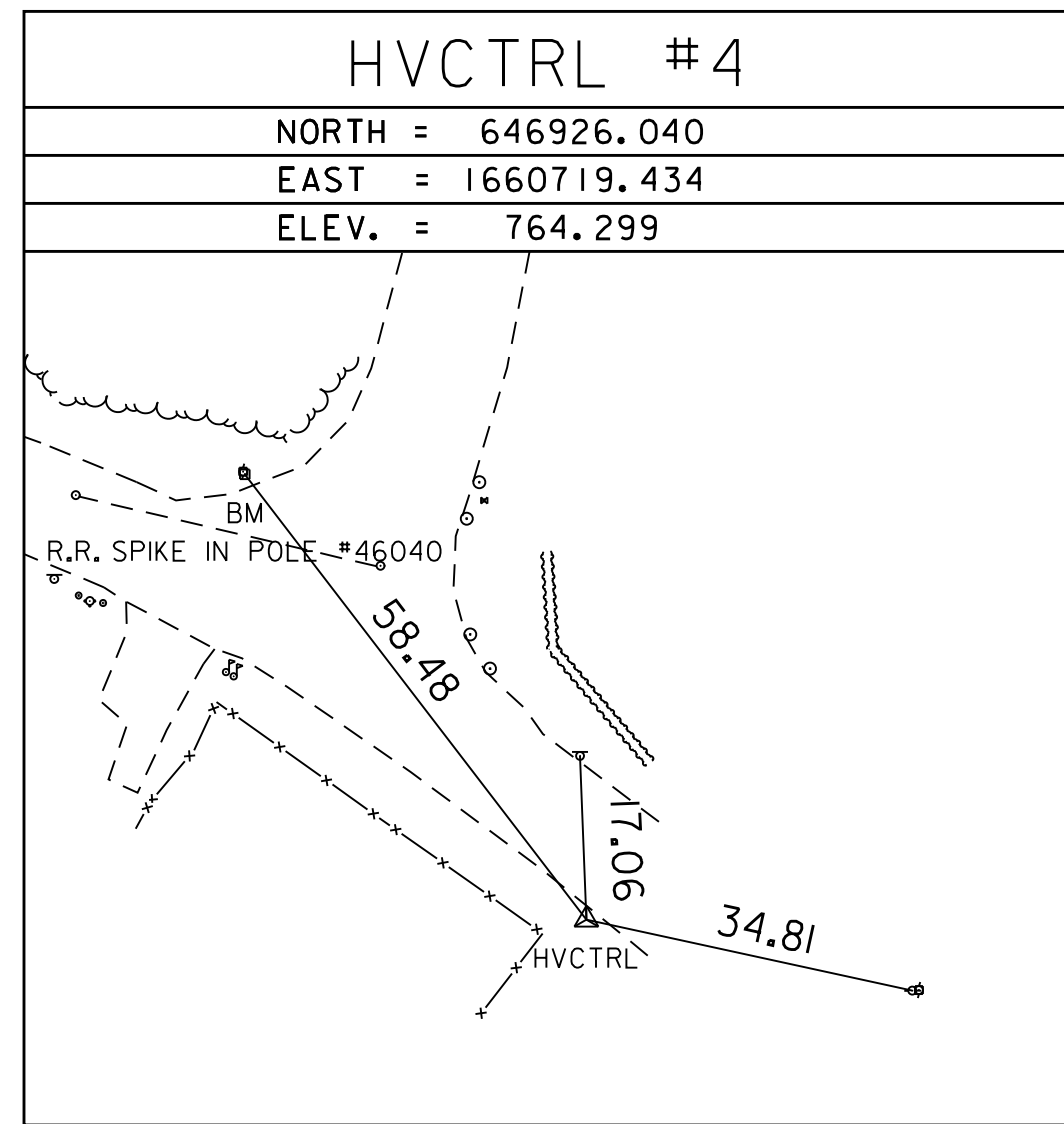
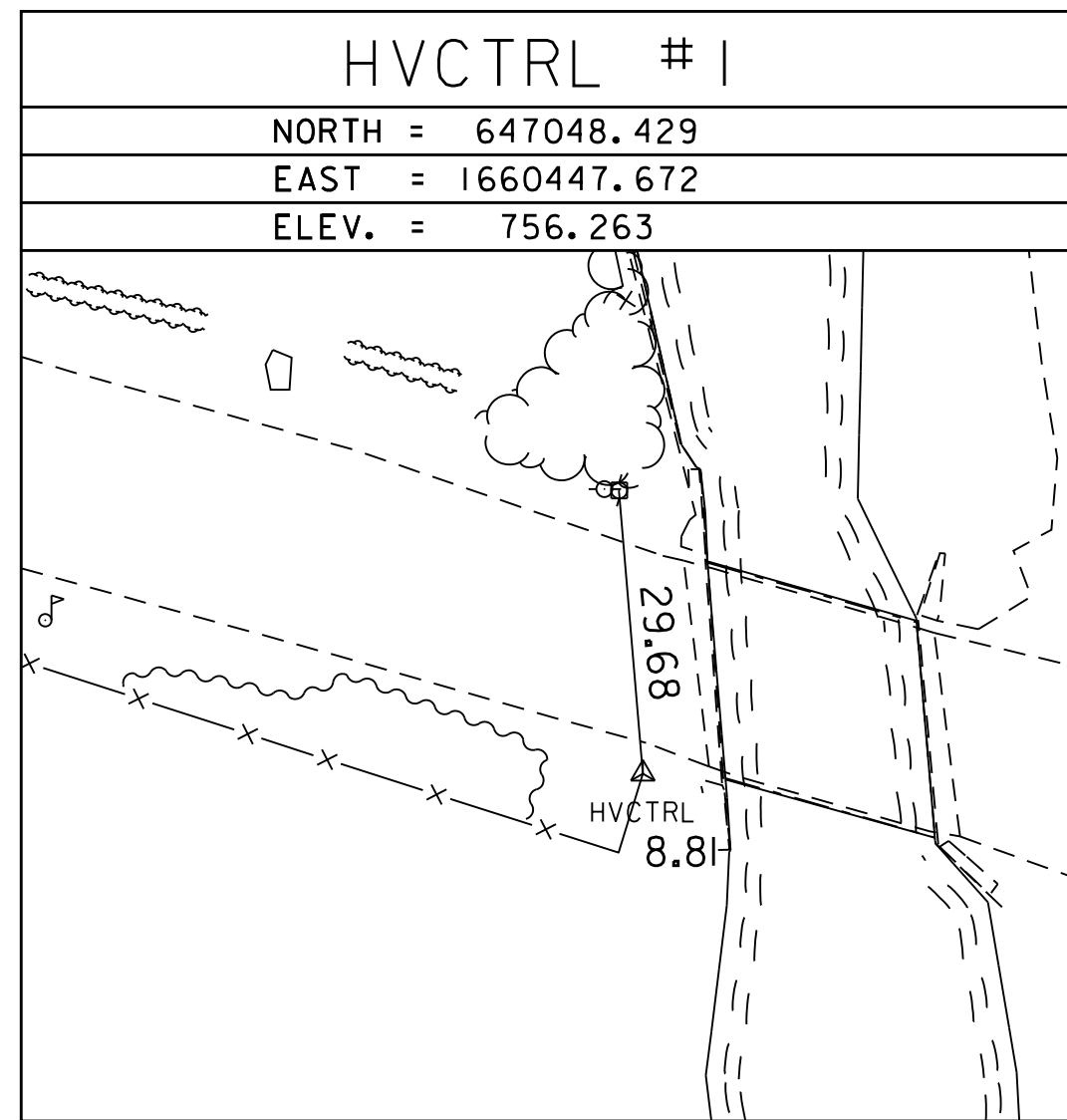
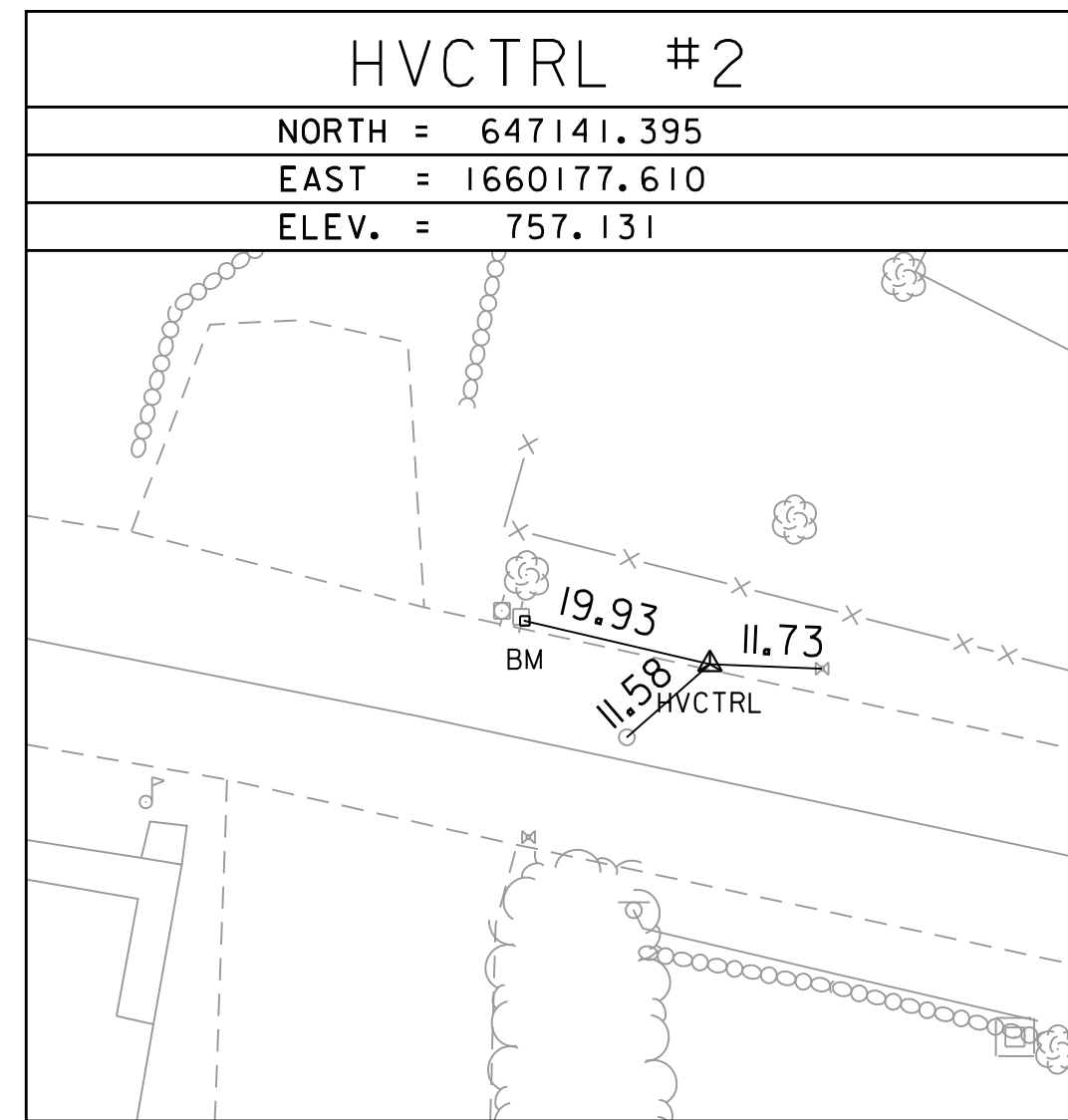




GPS CONTROL POINTS

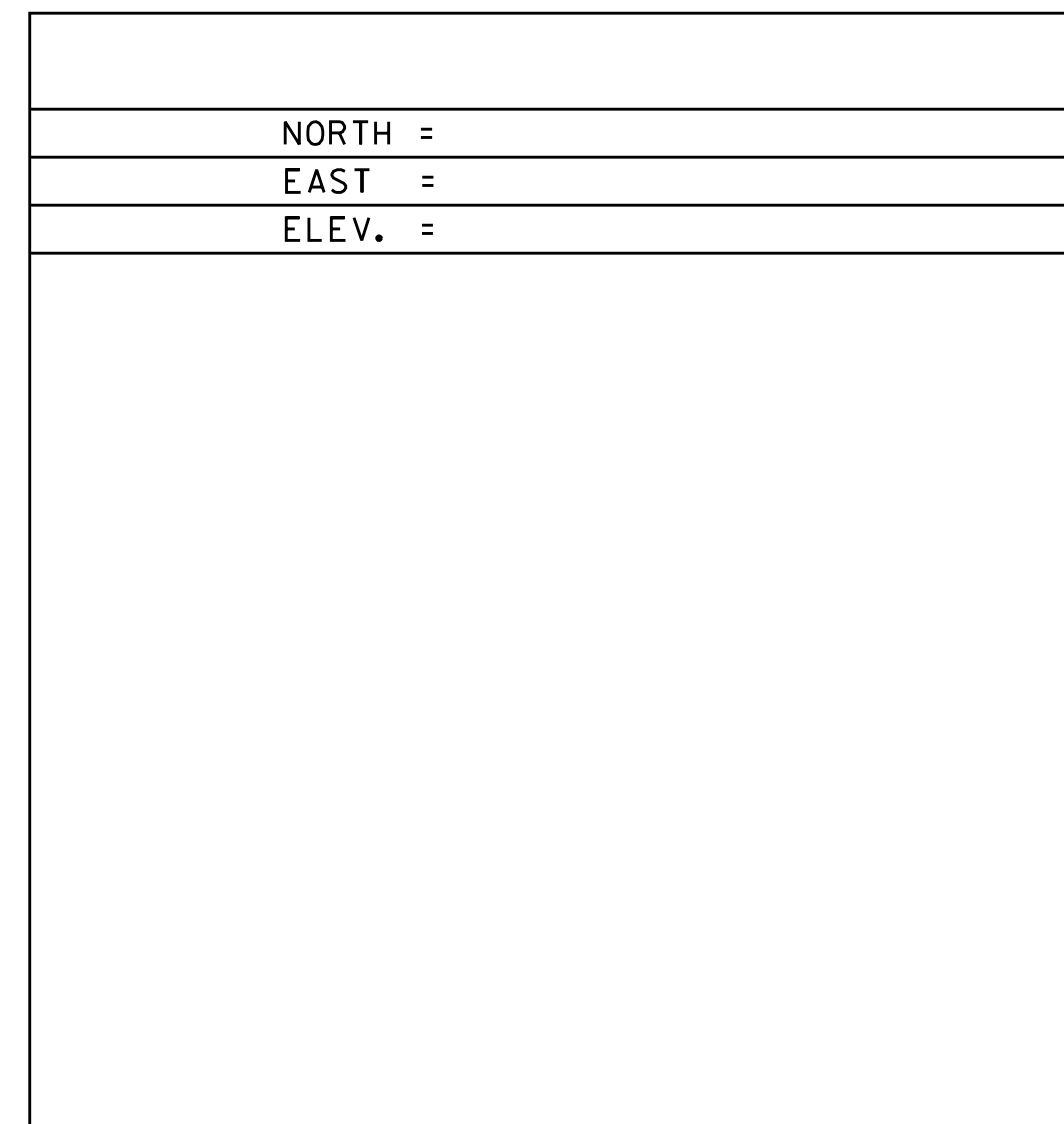
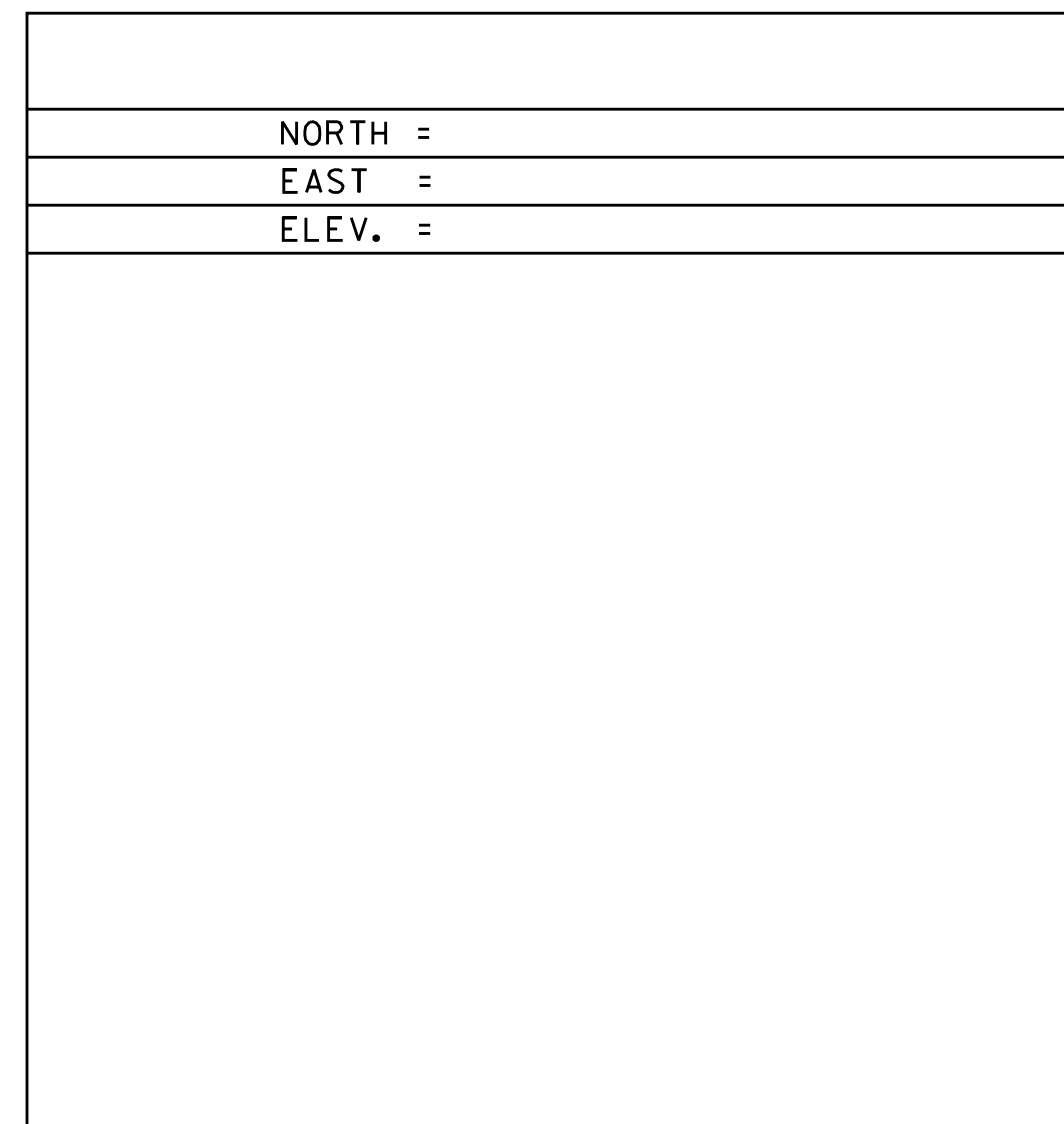
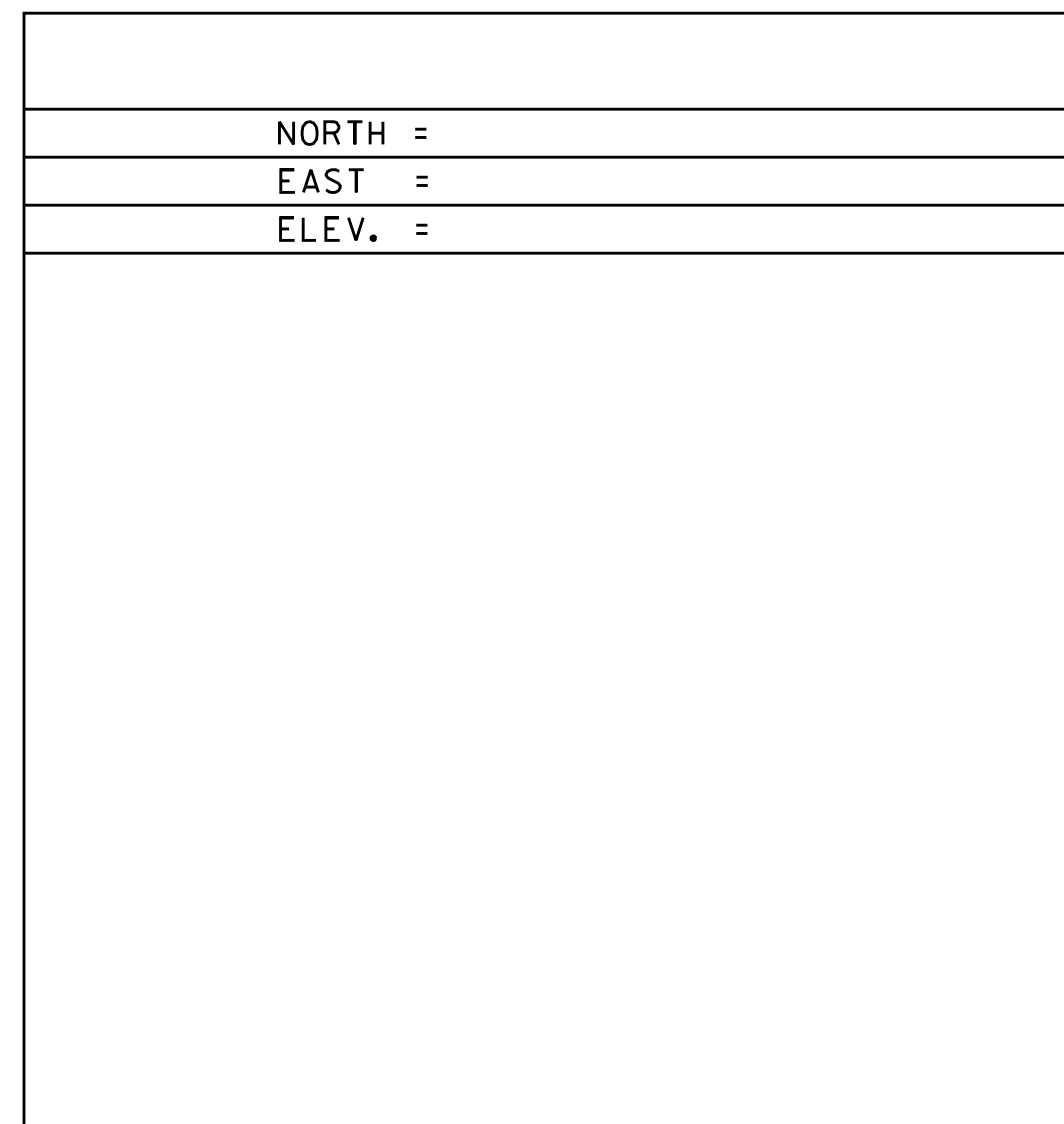
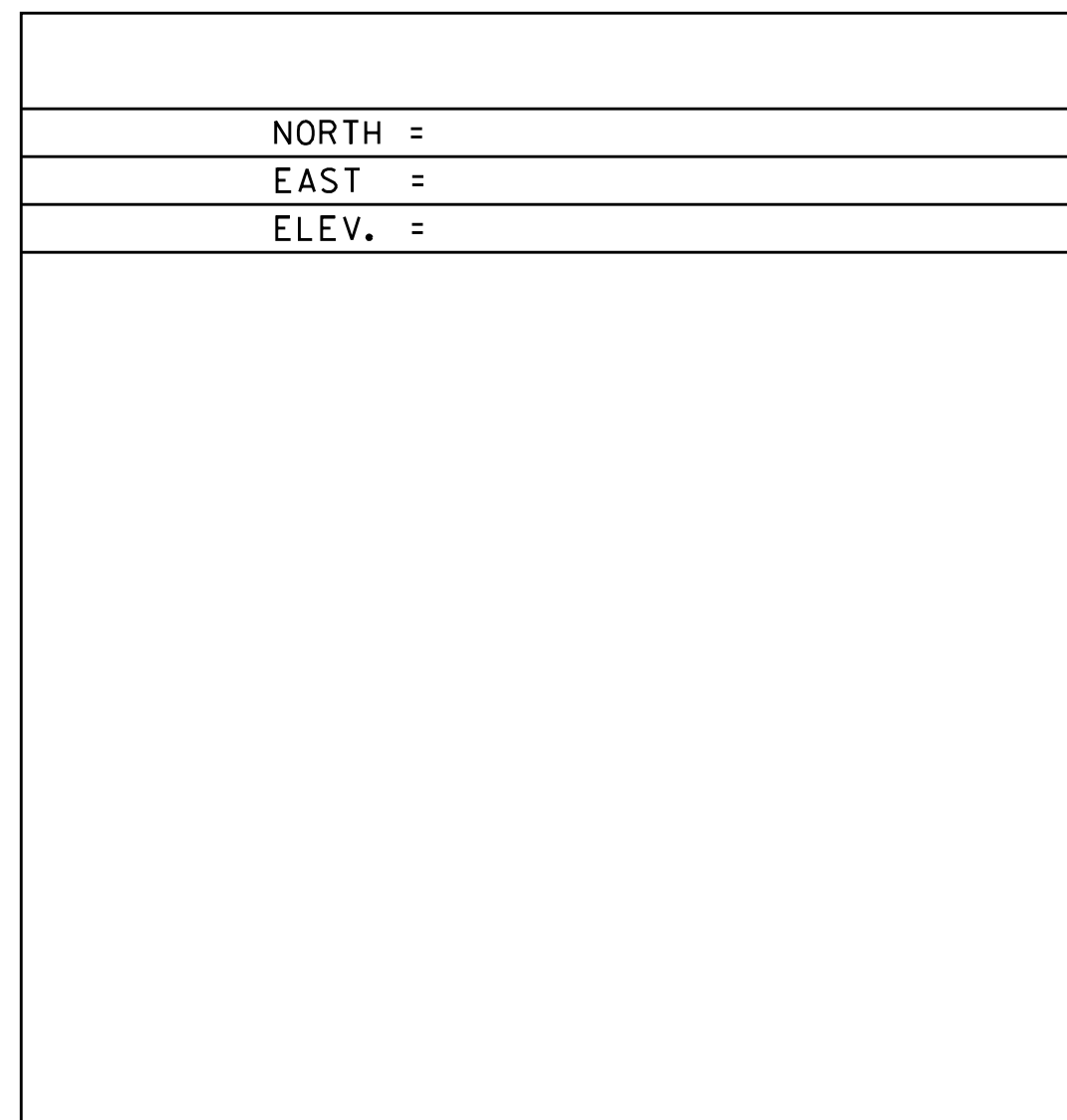
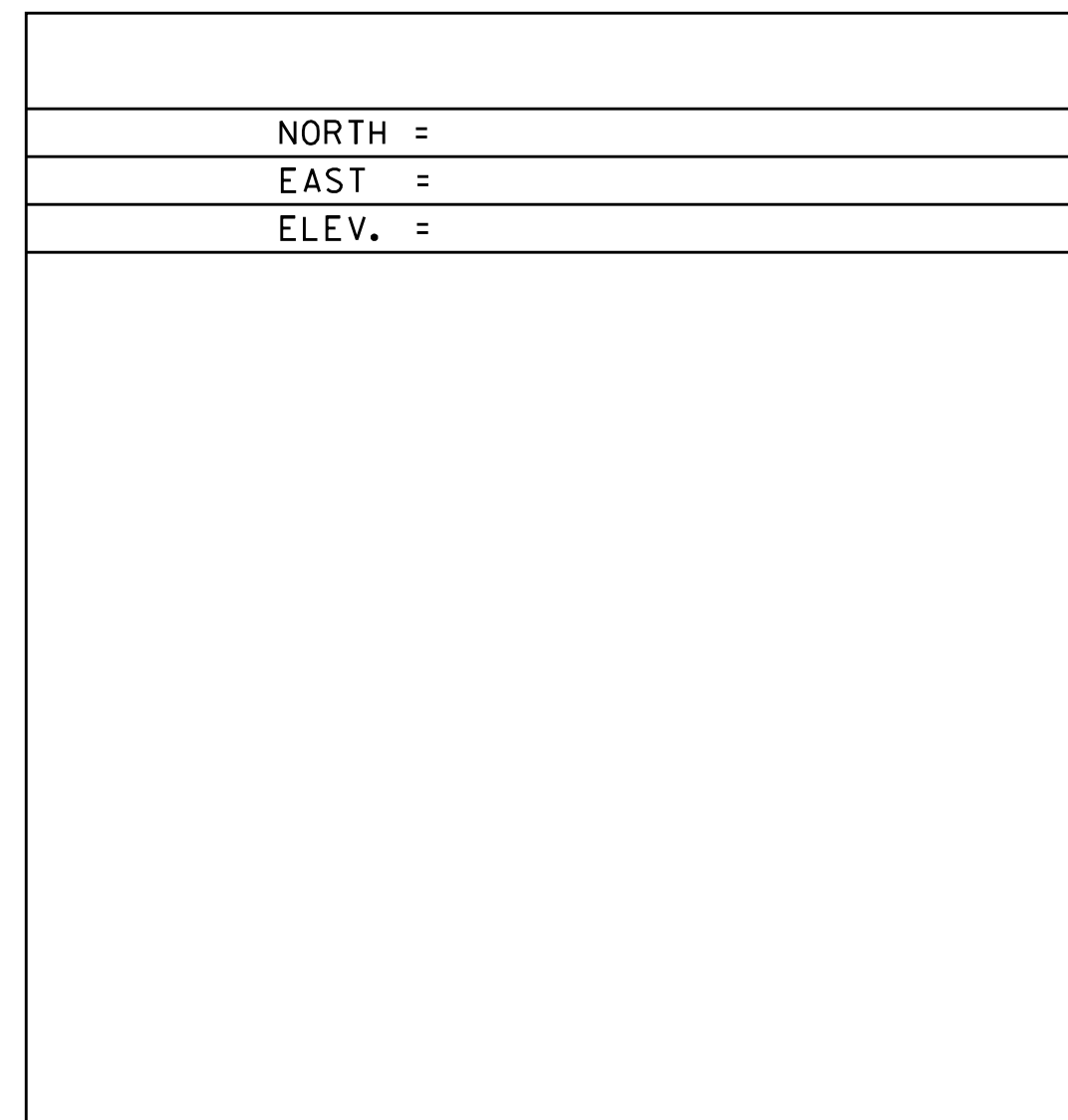
NORTHING, EASTING, AND ELEVATIONS LISTED BELOW FOR THE TRAVERSE TIES WERE DERIVED FROM A REAL TIME NETWORK/VIRTUAL REFERENCE STATION SOLUTION AND ARE BASED ON THE VERMONT CONTINUOUSLY OPERATING REFERENCE STATIONS (CORS).

TRAVERSE TIES



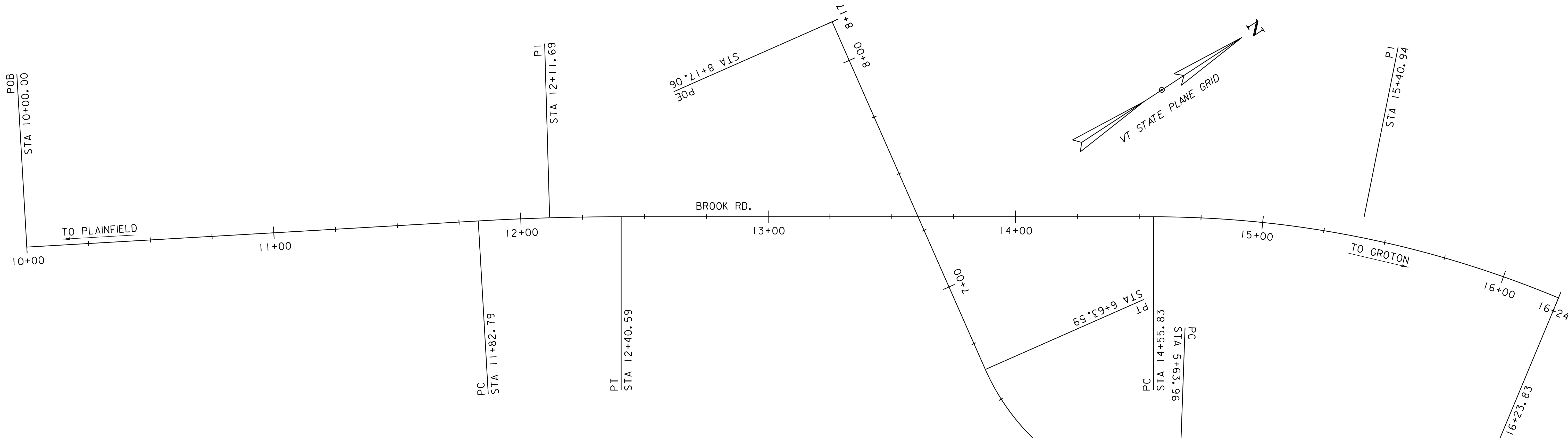
TRAVERSE COMPLETED BY R GILMAN P.C. / P. WINTERS & C. CYR 12/05/2013

ALIGNMENT TIES



DATUM	
VERTICAL	NAVD 88
HORIZONTAL	NAD 83/11
ADJUSTMENT	COMPASS

PROJECT NAME: BROOK ROAD BRIDGE	
PROJECT NUMBER: 58223.00	
FILE NAME: 58223.00_tl.dgn	PLOT DATE: 1/6/2021
PROJECT LEADER: J.D. KEENER	DRAWN BY: J.D. KEENER
DESIGNED BY: VHB	CHECKED BY: R.L. CLOUTIER
TIE SHEET	SHEET 9 OF 38

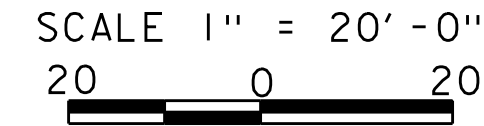


**BROOK ROAD (TH-2) ALIGNMENT**

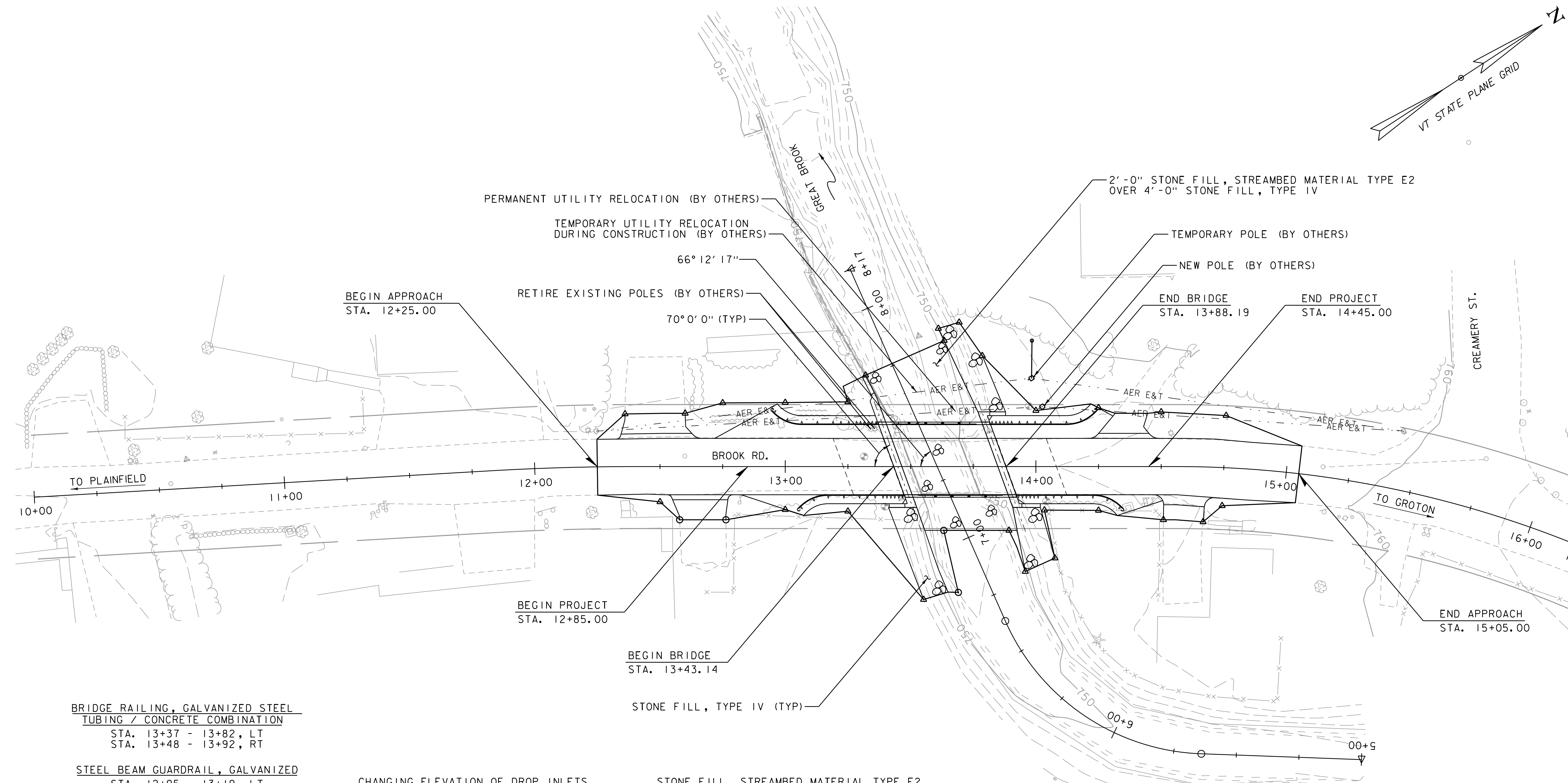
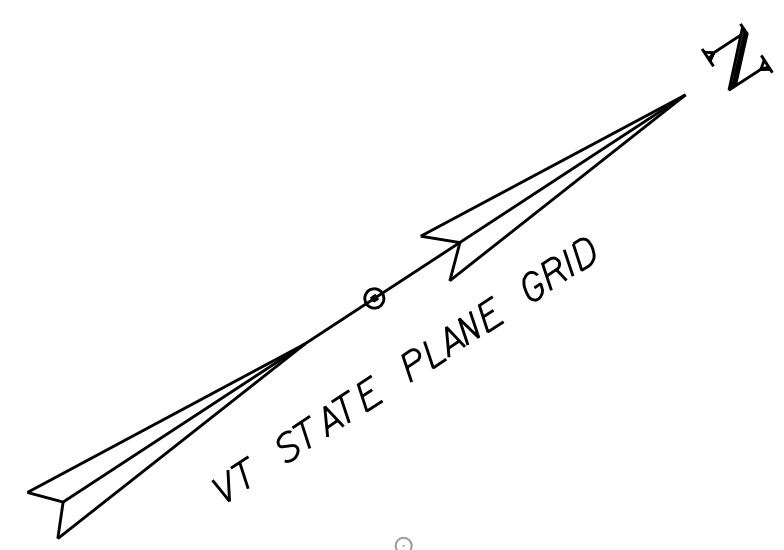
	STATION	NORTHING	EASTING
<b>ELEMENT: LINEAR</b>			
POB ( 1)	10+00.00	647143.5175	1660115.0927
PC ( 2)	11+82.79	647103.7558	1660293.5012
TANGENT DIRECTION:	S 77°26'09.19" E		
TANGENT LENGTH:	182.79		
<b>ELEMENT: CIRCULAR</b>			
PC ( 2)	11+82.79	647103.7558	1660293.5012
PI ( )	12+11.69	647097.4671	1660321.7182
CC ( 7)	12+40.59	647089.5589	1660349.5247
PT ( 3)	12+40.59	647089.5589	1660349.5247
RADIUS:	1000.00		
DELTA:	3°18'42.59" RIGHT		
DEGREE OF CURVATURE (ARC):	5°43'46.48"		
LENGTH:	57.80		
TANGENT:	28.91		
CHORD:	57.79		
MIDDLE ORDINATE:	0.42		
EXTERNAL:	0.42		
TANGENT DIRECTION:	S 77°26'09.19" E		
RADIAL DIRECTION:	S 12°33'50.81" W		
CHORD DIRECTION:	S 75°46'47.90" E		
RADIAL DIRECTION:	S 15°52'33.40" W		
TANGENT DIRECTION:	S 74°07'26.60" E		
<b>ELEMENT: LINEAR</b>			
PT ( 3)	12+40.59	647089.5589	1660349.5247
PC ( 4)	14+55.83	647030.6774	1660556.5595
TANGENT DIRECTION:	S 74°07'26.60" E		
TANGENT LENGTH:	215.25		
<b>ELEMENT: CIRCULAR</b>			
PC ( 4)	14+55.83	647030.6774	1660556.5595
PI ( )	15+40.94	647007.3947	1660638.4246
CC ( 8)	16+23.83	646621.8885	1660440.2985
PT ( 5)	16+23.83	646954.3828	1660705.0107
RADIUS:	425.00		
DELTA:	22°38'55.58" RIGHT		
DEGREE OF CURVATURE (ARC):	13°28'52.90"		
LENGTH:	168.00		
TANGENT:	85.11		
CHORD:	166.91		
MIDDLE ORDINATE:	8.27		
EXTERNAL:	8.44		
TANGENT DIRECTION:	S 74°07'26.60" E		
RADIAL DIRECTION:	S 15°52'33.40" W		
CHORD DIRECTION:	S 62°47'58.81" E		
RADIAL DIRECTION:	S 38°31'28.98" W		
TANGENT DIRECTION:	S 51°28'31.02" E		

**CHANNEL ALIGNMENT**

	STATION	NORTHING	EASTING
<b>ELEMENT: LINEAR</b>			
POB ( 1)	5+00.00	646897.8576	1660595.8335
PC ( 2)	5+63.96	646917.5674	1660534.9815
TANGENT DIRECTION:	N 72°03'10.77" W		
TANGENT LENGTH:	63.96		
<b>ELEMENT: CIRCULAR</b>			
PC ( 2)	5+63.96	646917.5674	1660534.9815
PI ( )	6+19.72	646934.7485	1660481.9369
CC ( 4)	6+63.59	647002.2369	1660562.4058
PT ( 5)	6+63.59	646989.9744	1660474.2546
RADIUS:	89.00		
DELTA:	64°08'00.85" RIGHT		
DEGREE OF CURVATURE (ARC):	64°22'38.21"		
LENGTH:	99.62		
TANGENT:	55.76		
CHORD:	94.50		
MIDDLE ORDINATE:	13.58		
EXTERNAL:	16.02		
TANGENT DIRECTION:	N 72°03'10.77" W		
RADIAL DIRECTION:	N 17°56'49.23" E		
CHORD DIRECTION:	N 39°59'10.35" W		
RADIAL DIRECTION:	N 82°04'50.07" E		
TANGENT DIRECTION:	N 7°55'09.93" W		
<b>ELEMENT: LINEAR</b>			
PT ( 5)	6+63.59	646989.9744	1660474.2546
POE ( 3)	8+17.06	647141.9832	1660453.1091
TANGENT DIRECTION:	N 7°55'09.93" W		
TANGENT LENGTH:	153.47		



PROJECT NAME: BROOK ROAD BRIDGE	
PROJECT NUMBER: 58223.00	
FILE NAME: 58223.00.dwg	PLOT DATE: 1/6/2021
PROJECT LEADER: J.D. KEENER	DRAWN BY: J.D. KEENER
DESIGNED BY: J.D. KEENER	CHECKED BY: D.E. PECK
ALIGNMENT SHEET	SHEET 10 OF 38



BRIDGE RAILING, GALVANIZED STEEL TUBING / CONCRETE COMBINATION  
 STA. 13+37 - 13+82, LT  
 STA. 13+48 - 13+92, RT

STEEL BEAM GUARDRAIL, GALVANIZED  
 STA. 12+95 - 13+19, LT  
 STA. 13+06 - 13+30, RT  
 STA. 14+00 - 14+23, LT  
 STA. 14+10 - 14+34, RT

ANCHOR FOR STEEL BEAM RAIL  
 STA. 13+07, LT  
 STA. 13+17, RT  
 STA. 14+23, LT  
 STA. 14+34, RT

GUARDRAIL APPROACH SECTION TO CONCRETE COMBINATION BRIDGE RAILING, TL-3  
 STA. 13+19 - 13+37, LT  
 STA. 13+30 - 13+48, RT  
 STA. 13+82 - 14+00, LT  
 STA. 13+92 - 14+10, RT

CHANGING ELEVATION OF DROP INLETS, CATCH BASINS, OR MANHOLES  
 STA. 12+59, LT  
 STA. 14+37, RT

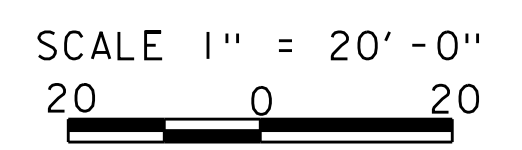
4 INCH YELLOW LINE  
 STA. 12+25 - 15+05, LT & RT

REMOVE AND RESET MAILBOX, SINGLE SUPPORT  
 STA. 14+43, RT  
 STA. 14+44, RT  
 STA. 14+46, RT

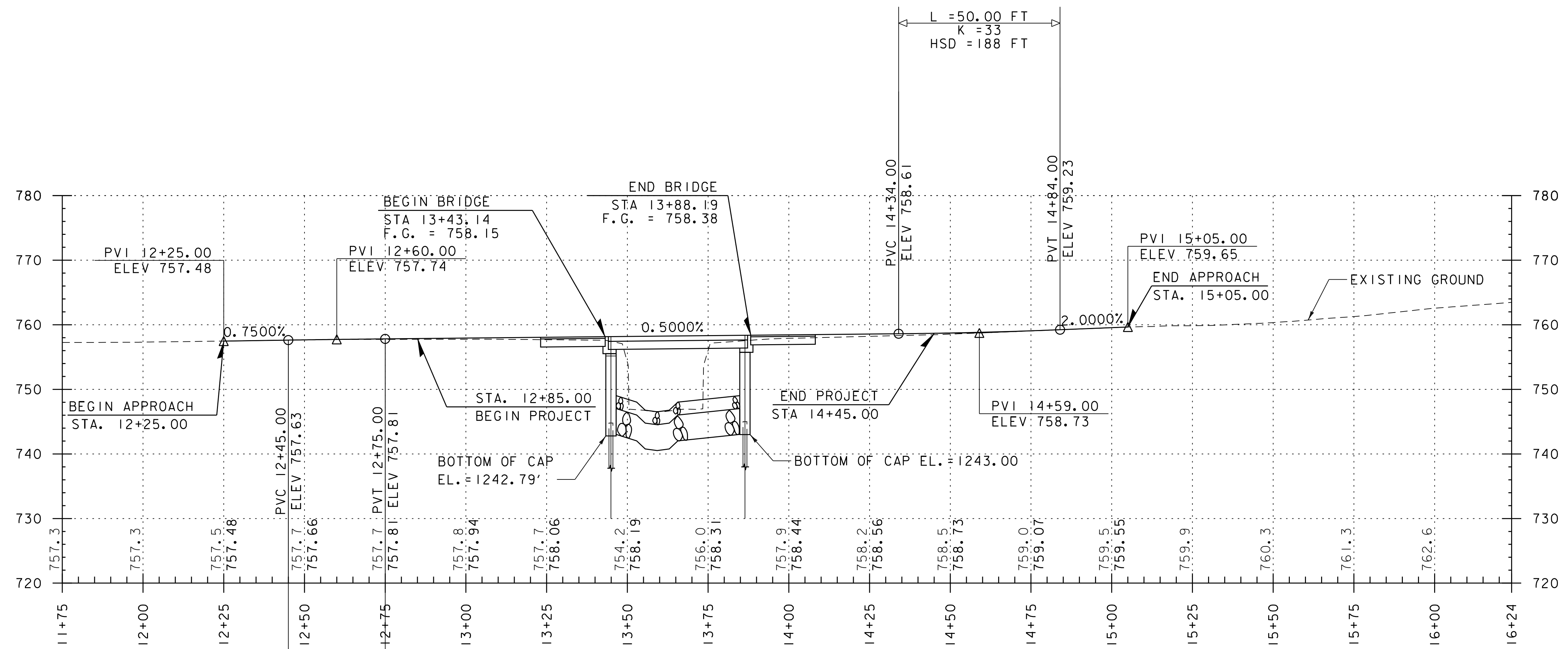
REMOVING AND RESETTING FENCE  
 STA. 13+00 - STA. 13+46, RT  
 STA. 14+05 - STA. 14+49, RT

STONE FILL, STREAMBED MATERIAL TYPE E2  
 CH. STA. 6+96 - 7+76

STONE FILL, TYPE IV  
 CH. STA. 6+78 - 7+04, RT  
 CH. STA. 6+82 - 7+24, LT  
 CH. STA. 6+96 - 7+76  
 CH. STA. 7+40 - 7+81, RT

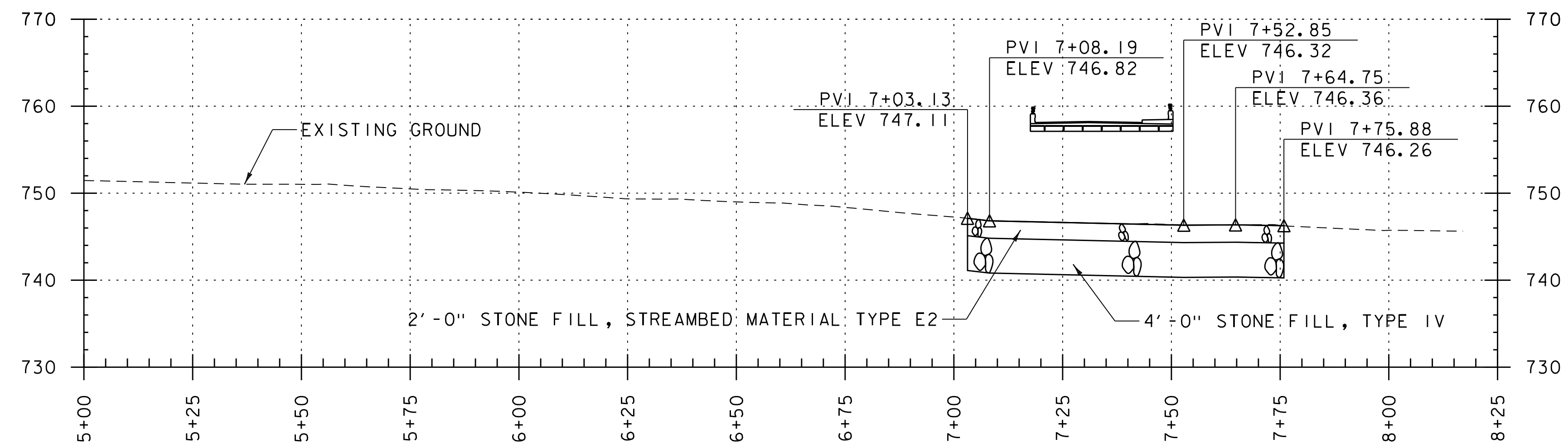


PROJECT NAME:	BROOK ROAD BRIDGE	PLOT DATE:	1/6/2021
PROJECT NUMBER:	58223.00	DRAWN BY:	J.D. KEENER
FILE NAME:	58223.00_BDR.dgn	DESIGNED BY:	J.D. KEENER
PROJECT LEADER:	J.D. KEENER	CHECKED BY:	R.H. BARNES
LAYOUT SHEET		SHEET	II OF 38



**BROOK ROAD (TH-2) PROFILE**

SCALE 1" = 20' HORIZONTAL  
1" = 10' VERTICAL



**GREAT BROOK PROFILE**

SCALE 1" = 20' HORIZONTAL  
1" = 10' VERTICAL

THE GRADES SHOWN TO THE NEAREST TENTH ARE THE ORIGINAL GROUND ELEVATIONS ALONG THE PROPOSED ALIGNMENT.  
THE GRADES SHOWN TO THE NEAREST HUNDREDTH ARE THE FINISH GRADES ALONG THE PROPOSED ALIGNMENT.

PROJECT NAME: BROOK ROAD BRIDGE  
PROJECT NUMBER: 58223.00

FILE NAME: 58223.00_PRO.dgn  
PROJECT LEADER: J.D. KEENER  
DESIGNED BY: D.M. PECK  
PROFILE SHEET

PLOT DATE: 1/6/2021  
DRAWN BY: J.D. KEENER  
CHECKED BY: J.D. KEENER  
SHEET 12 OF 38



**SOIL CLASSIFICATION**

**AASHTO**

- A1 Gravel and Sand
- A3 Fine Sand
- A2 Silty or Clayey Gravel and Sand
- A4 Silty Soil - Low Compressibility
- A5 Silty Soil - Highly Compressible
- A6 Clayey Soil - Low Compressibility
- A7 Clayey Soil - Highly Compressible

**ROCK QUALITY DESIGNATION**

R.Q.D. (%)	ROCK DESCRIPTION
<25	Very Poor
25 to 50	Poor
51 to 75	Fair
76 to 90	Good
>90	Excellent

**SHEAR STRENGTH**

UNDRAINED SHEAR STRENGTH IN P.S.F.	CONSISTENCY
<250	Very Soft
250-500	Soft
500-1000	Med. Stiff
1000-2000	Stiff
2000-4000	Very Stiff
>4000	Hard

**CORRELATION GUIDE OF "N" TO DENSITY/CONSISTENCY**

DENSITY (GRANULAR SOILS)		CONSISTENCY (COHESIVE SOILS)	
N	DESCRIPTIVE TERM	N	DESCRIPTIVE TERM
<5	Very Loose	<2	Very Soft
5-10	Loose	2-4	Soft
11-24	Med. Dense	5-8	Med. Stiff
25-50	Dense	9-15	Stiff
>50	Very Dense	16-30	Very Stiff
		31-60	Hard
		>60	Very Hard

**COMMONLY USED SYMBOLS**

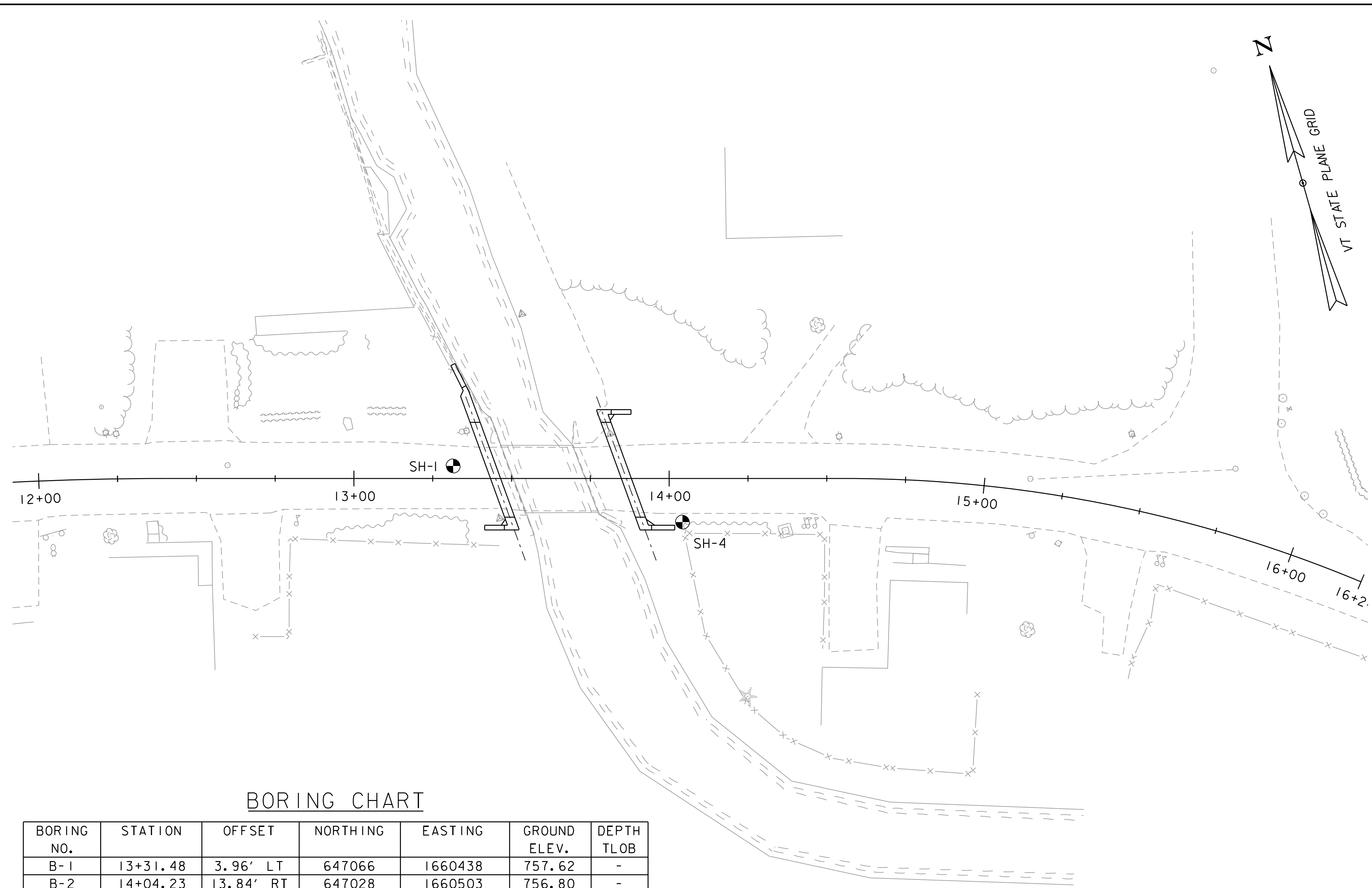
- ▼ Water Elevation
- ⊕ Standard Penetration Boring
- ⊗ Auger Boring
- ⊙ Rod Sounding
- S Sample
- N Standard Penetration Test  
Blow Count Per Foot For:  
2" O.D. Sampler  
1 3/8" I.D. Sampler  
Hammer Weight Of 140 Lbs.  
Hammer Fall Of 30"
- VS Field Vane Shear Test
- US Undisturbed Soil Sample
- B Blast
- DC Diamond Core
- MD Mud Drill
- WA Wash Ahead
- HSA Hollow Stem Auger
- AX Core Size 1 1/8"
- BX Core Size 1 7/8"
- NX Core Size 2 1/8"
- M Double Tube Core Barrel Used
- LL Liquid Limit
- PL Plastic Limit
- PI Plasticity Index
- NP Non Plastic
- w Moisture Content (Dry Wgt. Basis)
- D Dry
- M Moist
- MTW Moist To Wet
- W Wet
- Sat Saturated
- Bo Boulder
- Gr Gravel
- Sa Sand
- Si Silt
- Cl Clay
- HP Hardpan
- Le Ledge
- NLTD No Ledge To Depth
- CNPF Can Not Penetrate Further
- TLOB Top of Ledge Or Boulder
- NR No Recovery
- Rec. Recovery
- 1/2 Rec. Percent Recovery
- ROD Rock Quality Designation
- CBR California Bearing Ratio
- < Less Than
- > Greater Than
- R Refusal (N > 100)
- VTSPG NAD83 - See Note 7

**COLOR**

- blk Black
- bl Blue
- brn Brown
- dk Dark
- gry Gray
- gn Green
- lt Light
- or Orange
- pnk Pink
- pu Purple
- rd Red
- tn Tan
- wh White
- yel Yellow
- mltc Multicolored

**DEFINITIONS (AASHTO)**

- BEDROCK (LEDGE) - Rock in its native location of indefinite thickness.
- BOULDER - A rock fragment with an average dimension > 12 inches.
- COBBLE - Rock fragments with an average dimension between 3 and 12 inches.
- GRAVEL - Rounded particles of rock < 3" and > 0.0787" (#10 sieve).
- SAND - Particles of rock < 0.0787" (#10 sieve) and > 0.0029" (#200 sieve).
- SLT - Soil < 0.0029" (#200 sieve), non or slightly plastic and exhibits no strength when air-dried.
- CLAY - Fine grained soil, exhibits plasticity when moist and considerable strength when air-dried.
- VARVED - Alternate layers of silt and clay.
- HARDPAN - Extremely dense soil, cemented layer, not softened when wet.
- MUCK - Soft organic soil (containing > 10% organic material).
- MOISTURE CONTENT - Weight of water divided by dry weight of soil.
- FLOWING SAND - Granular soil so saturated (loose) that it flows into drill casing during extraction of wash rod.
- STRIKE - Angle from magnetic north to line of intersection of bed with a horizontal plane.
- DIP - Inclination of bed with a horizontal plane.



**BORING CHART**

BORING NO.	STATION	OFFSET	NORTHING	EASTING	GROUND ELEV.	DEPTH TLOB
B-1	13+31.48	3.96' LT	647066	1660438	757.62	-
B-2	14+04.23	13.84' RT	647028	1660503	756.80	-

**BORING LAYOUT**

SCALE 1" = 20'-0"  
20 0 20

**GENERAL NOTES**

- The subsurface explorations shown herein were made between Dec 5, 2017 and Dec 6, 2017 by GeoDesign.
- Soil and rock classifications, properties and descriptions are based on engineering interpretation from available subsurface information by the Agency and may not necessarily reflect actual variations in subsurface conditions that may be encountered between individual boring or sample locations.
- Observed water levels and/or conditions indicated are as recorded at the time of exploration and may vary according to the prevailing rainfall, methods of exploration and other factors.
- Engineering judgment was exercised in preparing the subsurface information presented herein. Analysis and interpretation of subsurface data was performed and interpreted for Agency design and estimating purposes. Presentation of the information in the Contract is intended to provide the Contractor access to the same data available to the Agency. The subsurface information is presented in good faith and is not intended as a substitute for personal investigation, independent interpretation, independent analysis or judgment by the Contractor.
- Pictorial structure details shown on the boring plan layout or soils profile are for illustrative purposes only and may not accurately portray final contract details.
- Terminology used on boring logs to describe the hardness, degree of weathering, and spacing of fractures, joints and other discontinuities in the bedrock is defined in the AASHTO Manual on Subsurface Investigations, 1988.
- Northing and Easting coordinates are shown in Vermont State Plane Grid North American Datum 1983 in meters and survey feet.



PROJECT NAME: BROOK ROAD BRIDGE

PROJECT NUMBER: 58223.00

FILE NAME: 58223.00_bor.dgn

PROJECT LEADER: J.D. KEENER

DESIGNED BY: SANBORN HEAD

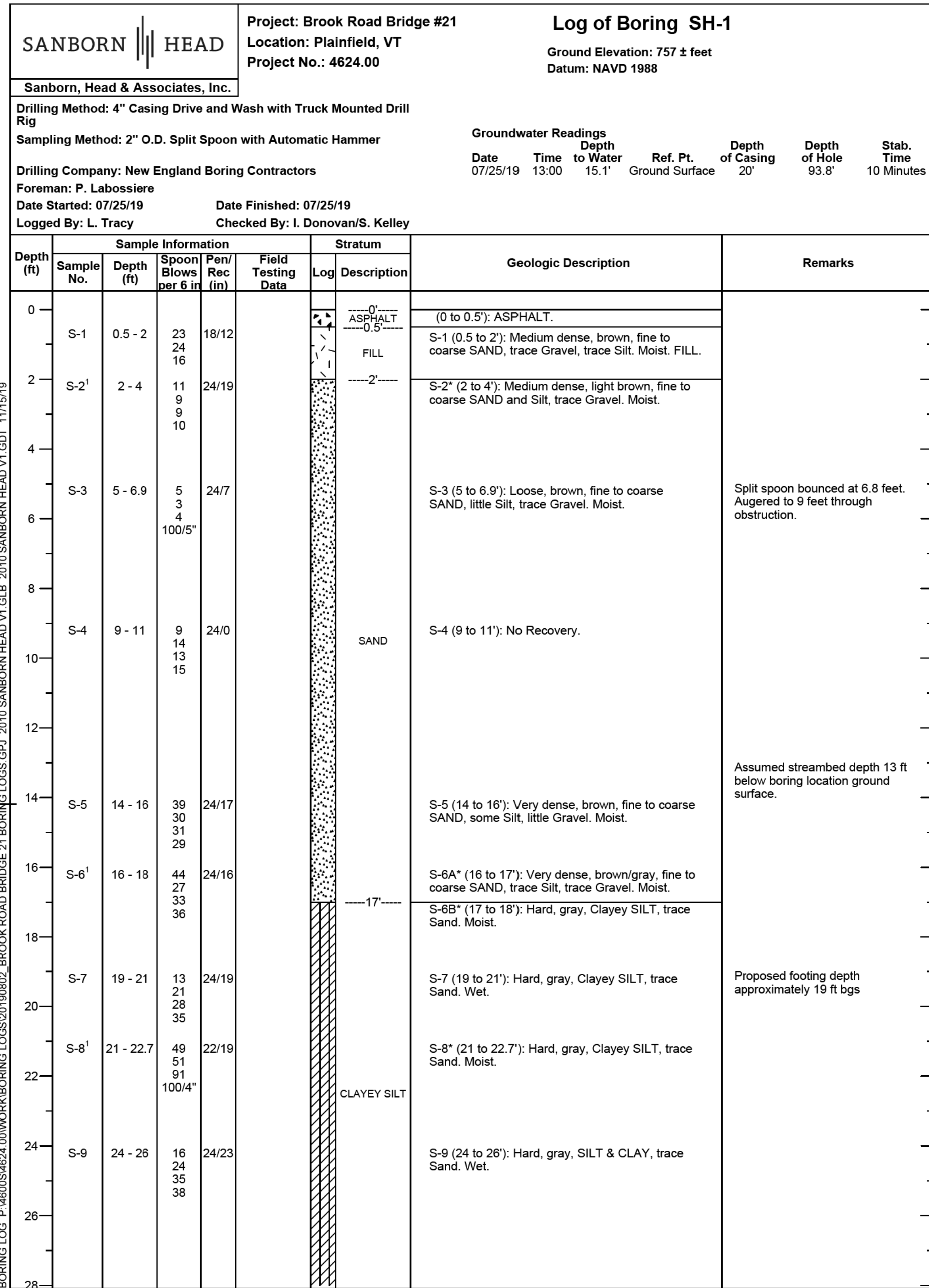
BORING INFORMATION SHEET

PLOT DATE: 1/6/2021

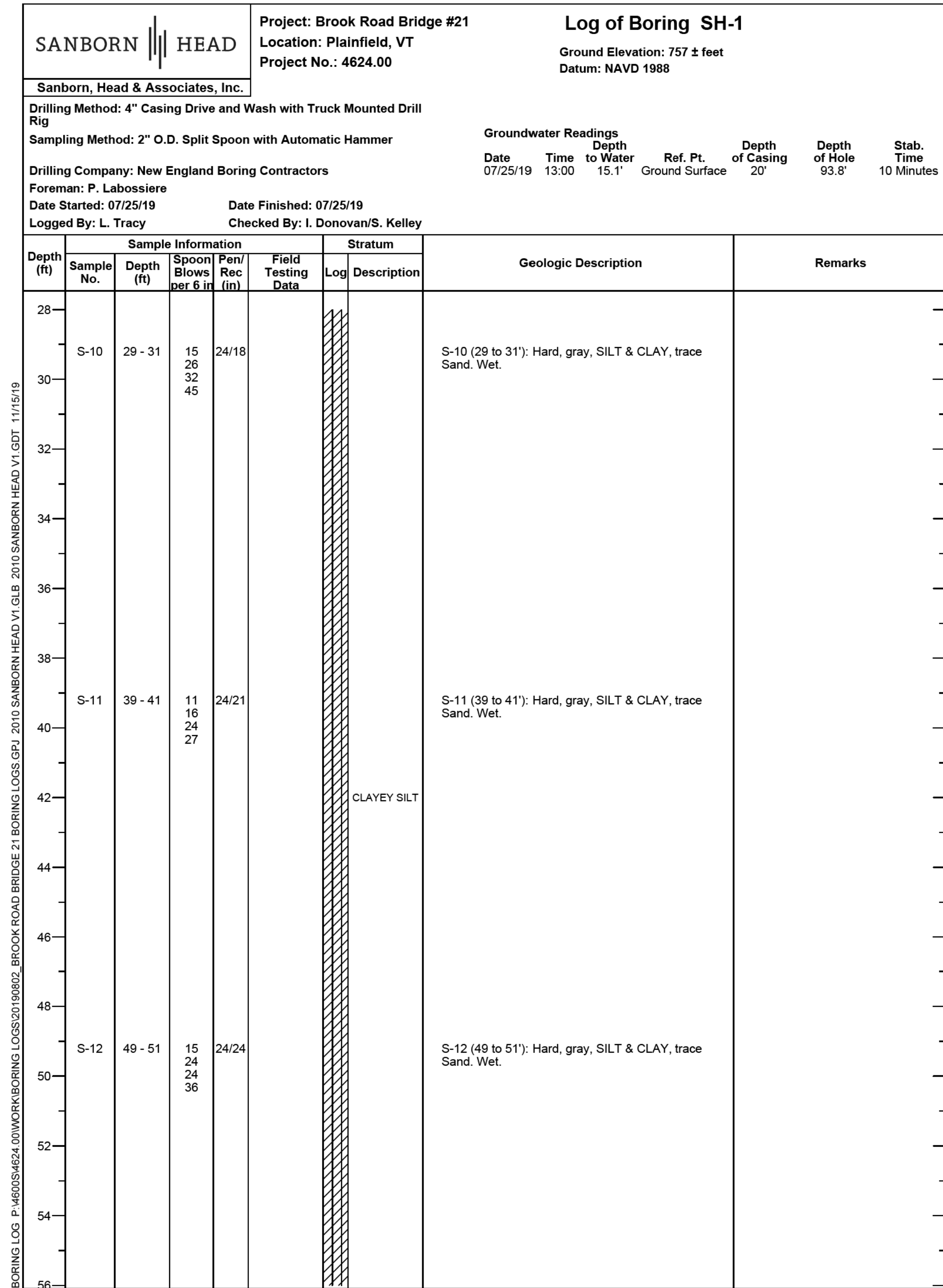
DRAWN BY: J.D. KEENER

CHECKED BY: R.H. BARNES

SHEET 13 OF 38



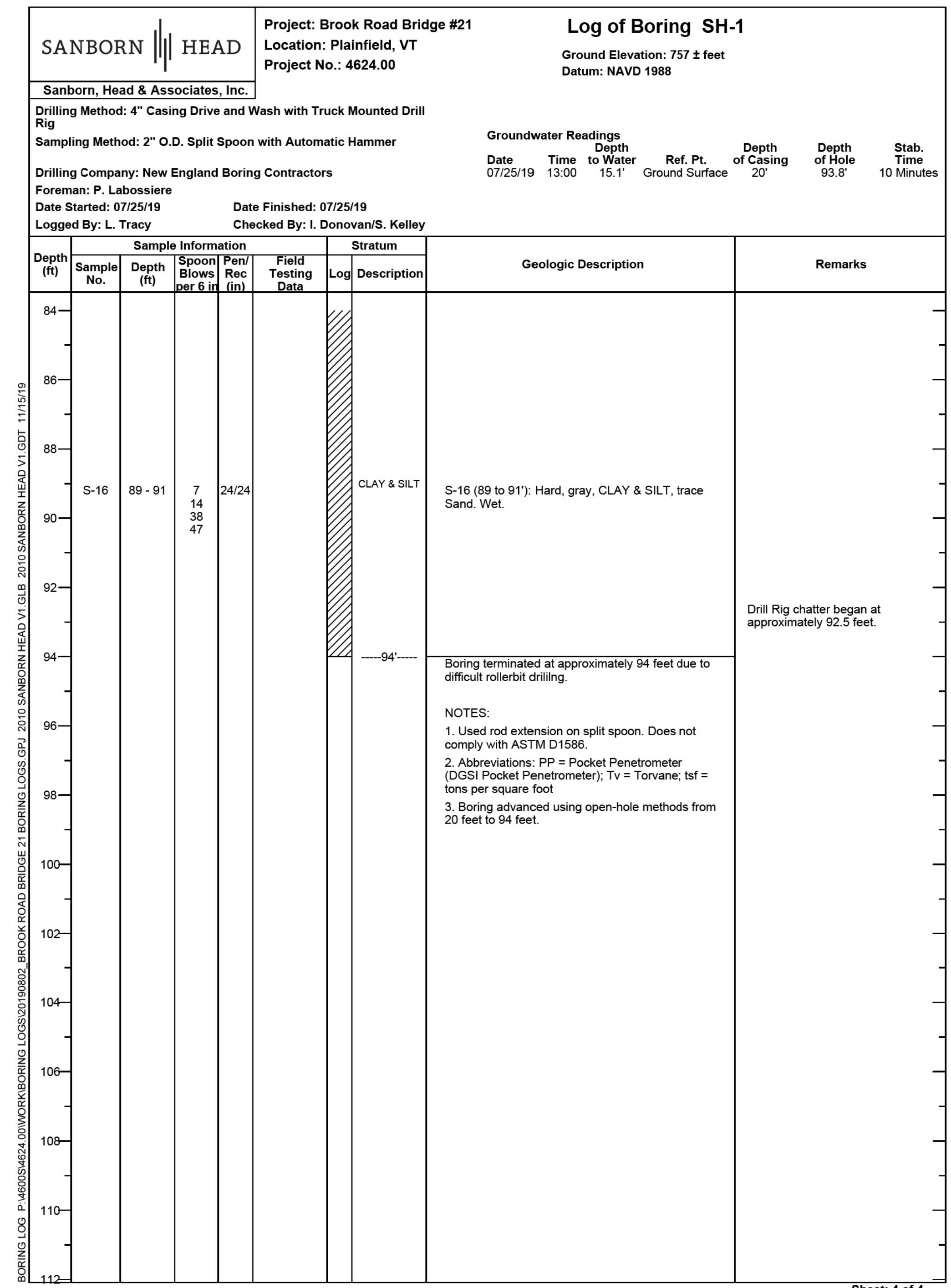
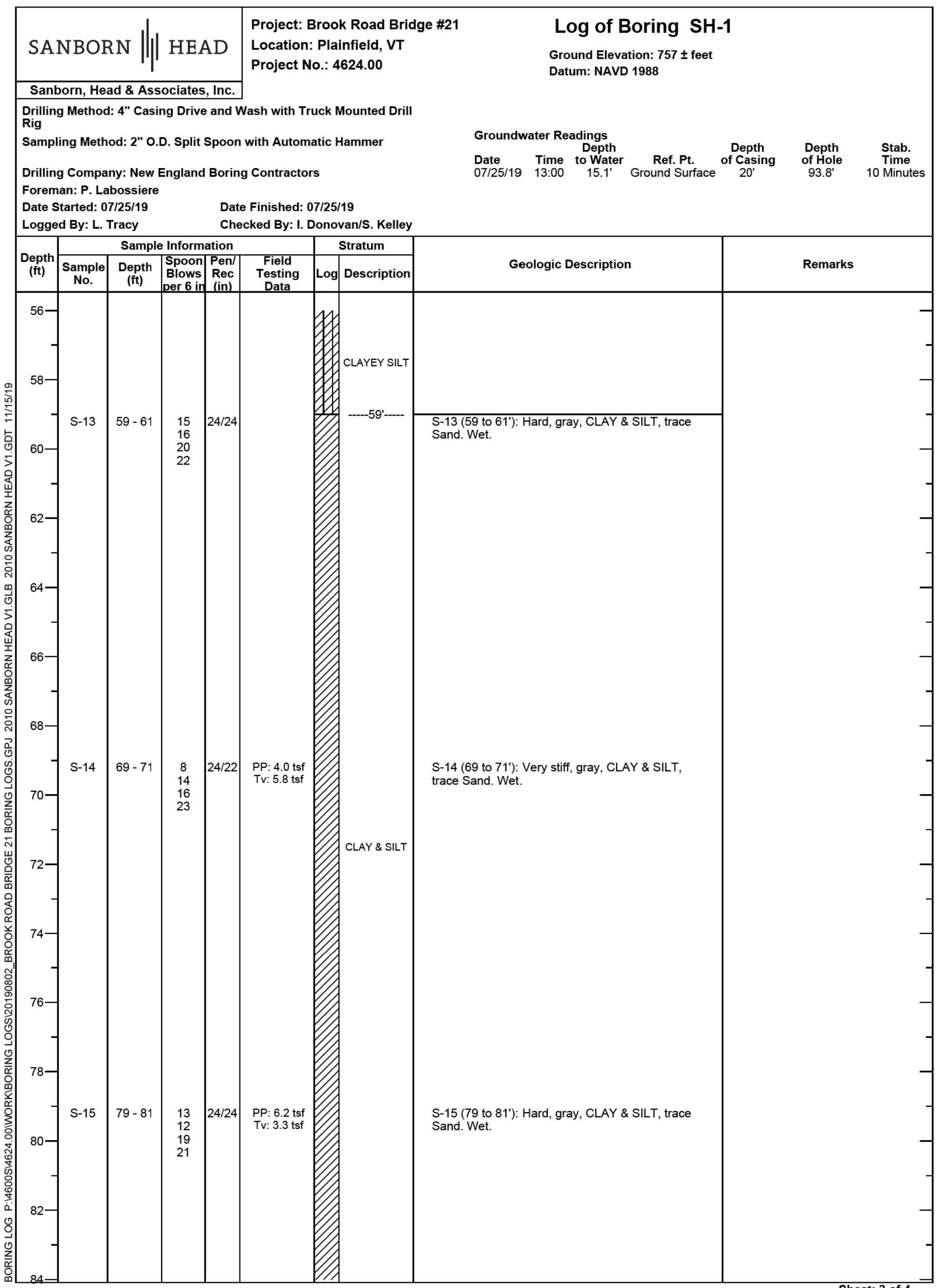
BOTTOM OF PILE CAP  
 EL = 742.79



PROJECT NAME: BROOK ROAD BRIDGE  
 PROJECT NUMBER: 58223



FILE NAME: 58223.00_borlogs.dgn PLOT DATE: 1/6/2021  
 PROJECT LEADER: J.D. KEENER DRAWN BY: J.D. KEENER  
 DESIGNED BY: SANBORN HEAD CHECKED BY: R.H. BARNES  
 BORING LOGS (1 OF 4) SHEET 14 OF 38

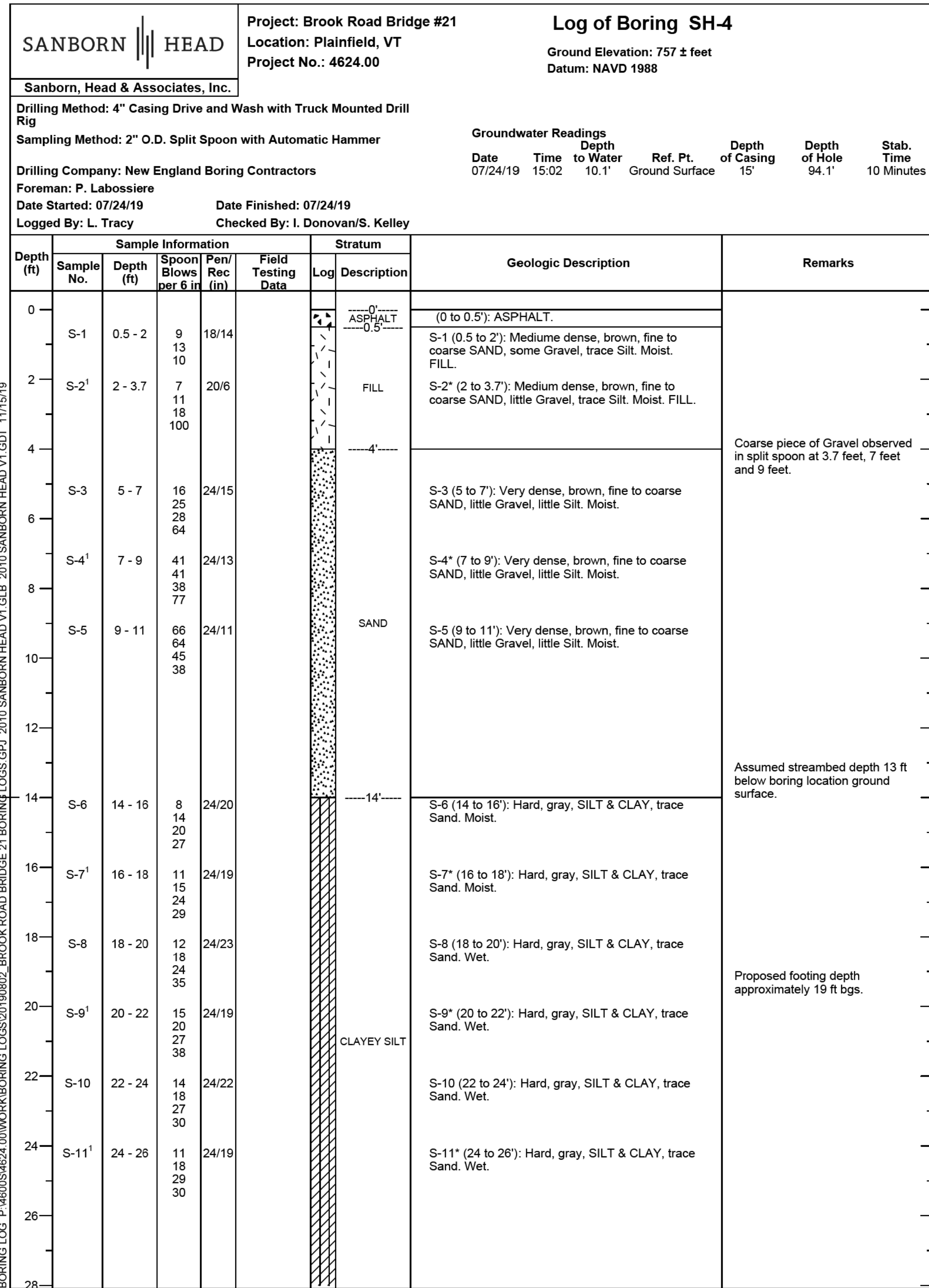


PROJECT NAME: BROOK ROAD BRIDGE  
PROJECT NUMBER: 58223

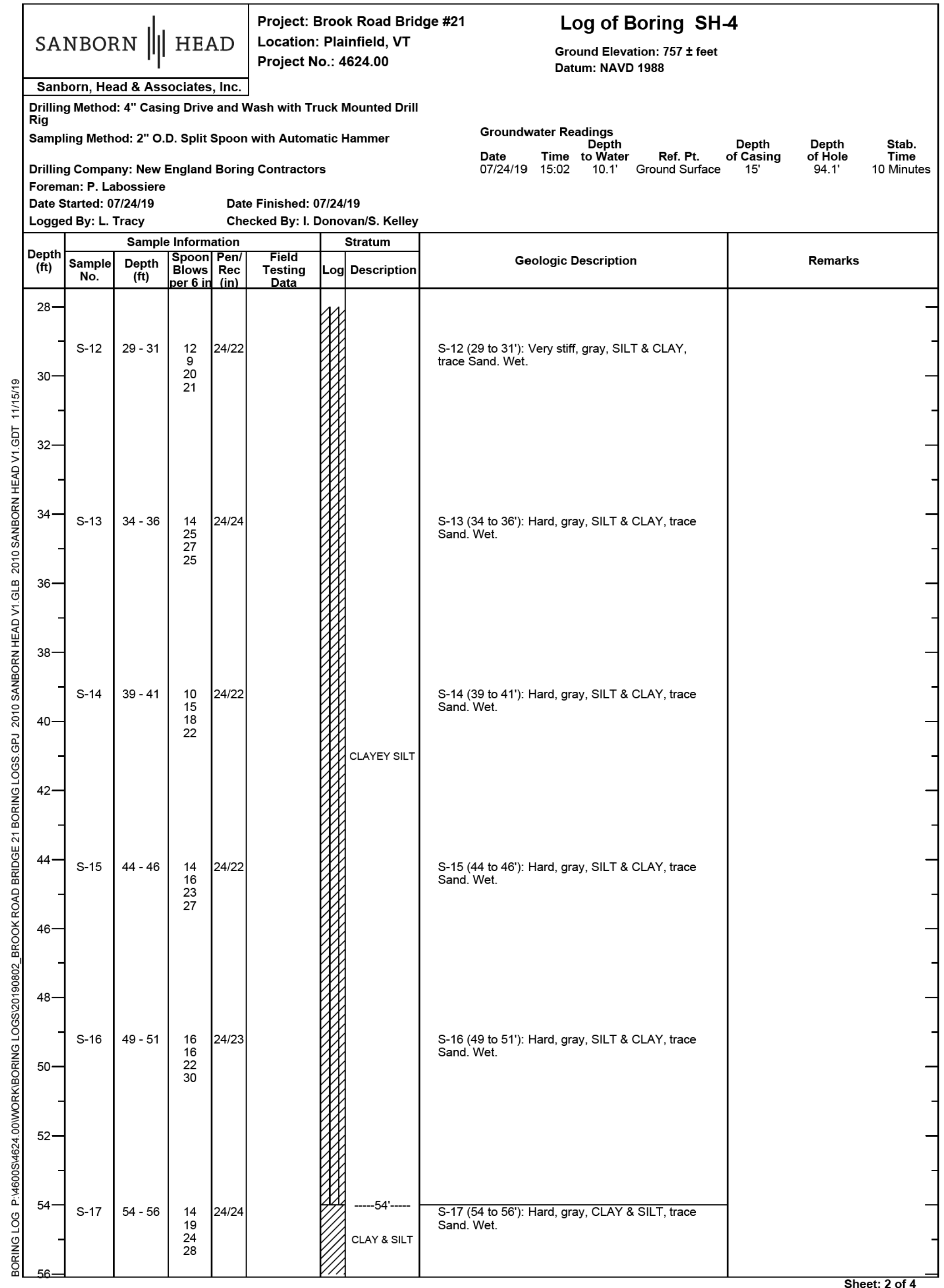
FILE NAME: 58223.00_borlogs.dgn  
PROJECT LEADER: J.D. KEENER  
DESIGNED BY: SANBORN HEAD  
BORING LOGS (2 OF 4)

PLOT DATE: 1/6/2021  
DRAWN BY: J.D. KEENER  
CHECKED BY: R.H. BARNES  
SHEET 15 OF 38





BOTTOM OF PILE CAP  
 EL = 743.00



PROJECT NAME: BROOK ROAD BRIDGE  
 PROJECT NUMBER: 58223

FILE NAME: 58223.00_borlogs.dgn  
 PROJECT LEADER: J.D. KEENER  
 DESIGNED BY: SANBORN HEAD  
 BORING LOGS (3 OF 4)

PLOT DATE: 1/6/2021  
 DRAWN BY: J.D. KEENER  
 CHECKED BY: R.H. BARNES  
 SHEET 16 OF 38





SANBORN HEAD		Project: Brook Road Bridge #21		Log of Boring SH-4			
Sanborn, Head & Associates, Inc.		Location: Plainfield, VT		Ground Elevation: 757 ± feet			
		Project No.: 4624.00		Datum: NAVD 1988			
Drilling Method: 4" Casing Drive and Wash with Truck Mounted Drill Rig Sampling Method: 2" O.D. Split Spoon with Automatic Hammer Drilling Company: New England Boring Contractors Foreman: P. Labossiere Date Started: 07/24/19 Logged By: L. Tracy Date Finished: 07/24/19 Checked By: I. Donovan/S. Kelley							
		Groundwater Readings Date: 07/24/19 Time to Water: 15:02 Depth to Water: 10.1'		Ref. Pt. Ground Surface Depth of Casing: 15' Depth of Hole: 94.1' Stab. Time: 10 Minutes			
Depth (ft)	Sample Information				Stratum	Geologic Description	Remarks
	Sample No.	Depth (ft)	Spoon Blows per 6 in	Pen/ Rec (in)			
56							
58							
60							
62							
64	S-18	64 - 66	13 13 22	24/24		S-18 (64 to 66'): Hard, gray, CLAY & SILT, trace Sand. Wet.	
66							
68							
70					CLAY & SILT		
72							
74	S-19	74 - 76	11 16 26 24	24/24		S-19 (74 to 76'): Hard, gray, Silty CLAY, trace Sand. Wet.	
76							
78							
80							
82							
84							

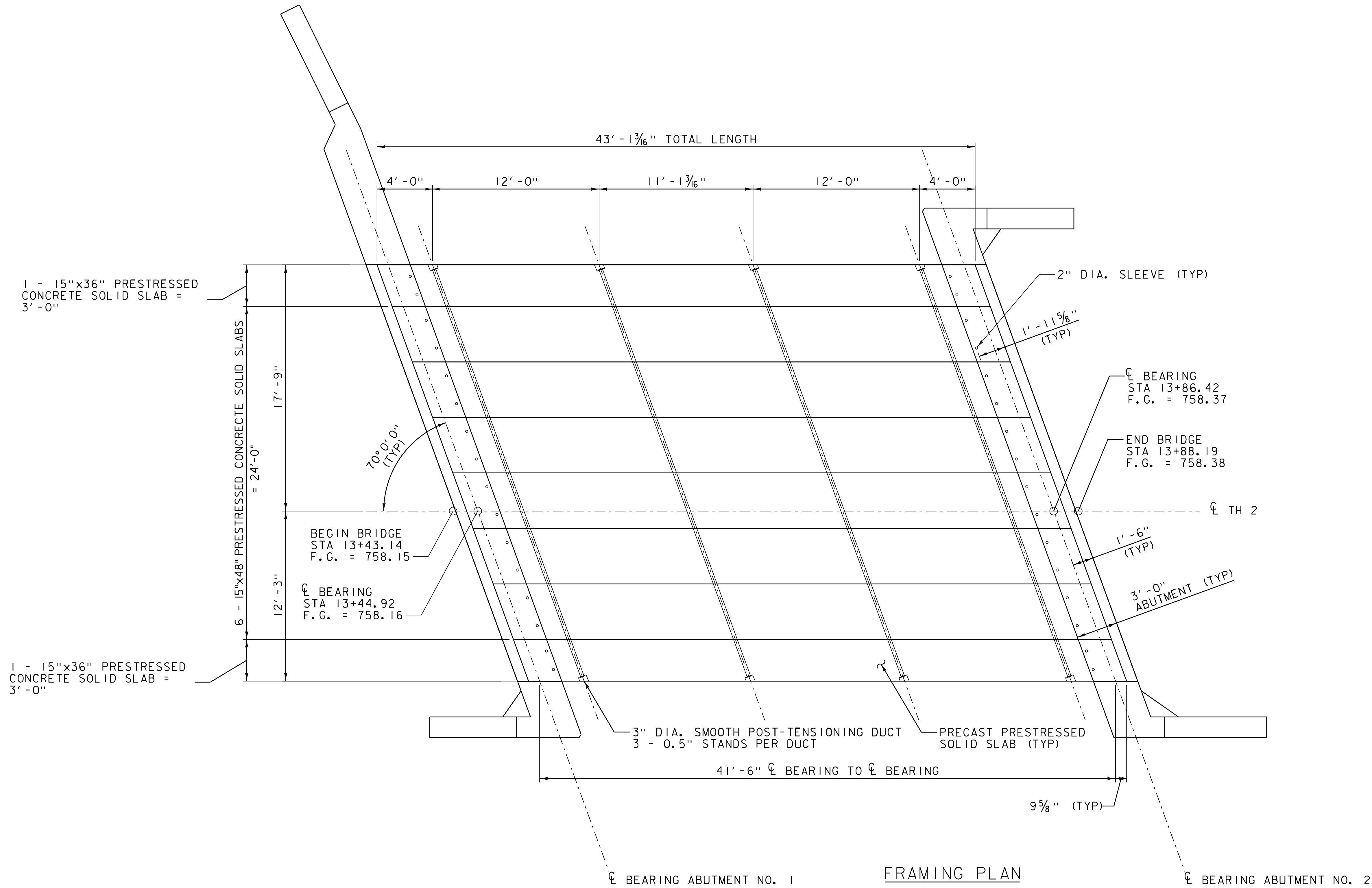
Sheet: 3 of 4

SANBORN HEAD		Project: Brook Road Bridge #21		Log of Boring SH-4			
Sanborn, Head & Associates, Inc.		Location: Plainfield, VT		Ground Elevation: 757 ± feet			
		Project No.: 4624.00		Datum: NAVD 1988			
Drilling Method: 4" Casing Drive and Wash with Truck Mounted Drill Rig Sampling Method: 2" O.D. Split Spoon with Automatic Hammer Drilling Company: New England Boring Contractors Foreman: P. Labossiere Date Started: 07/24/19 Logged By: L. Tracy Date Finished: 07/24/19 Checked By: I. Donovan/S. Kelley							
		Groundwater Readings Date: 07/24/19 Time to Water: 15:02 Depth to Water: 10.1'		Ref. Pt. Ground Surface Depth of Casing: 15' Depth of Hole: 94.1' Stab. Time: 10 Minutes			
Depth (ft)	Sample Information				Stratum	Geologic Description	Remarks
	Sample No.	Depth (ft)	Spoon Blows per 6 in	Pen/ Rec (in)			
84	S-20	84 - 86	13 19 27 34	24/24		S-20 (84 to 86'): Hard, gray, Silty CLAY, trace Sand. Wet.	
86							
88							
90					CLAY & SILT		
92							Rig chatter at ~91.5 feet. Observed drilling becoming more difficult between 91.5 and 94 feet.
94	S-21	94 - 94.1	100/1"	1/0		S-21 (94 to 94.1'): No Recovery. Boring terminated at 94.1 feet due to split spoon refusal.	
96							
98							
100							
102							
104							
106							
108							
110							
112							

Sheet: 4 of 4

PROJECT NAME: BROOK ROAD BRIDGE  
 PROJECT NUMBER: 58223  
 FILE NAME: 58223.00_borlogs.dgn  
 PROJECT LEADER: J.D. KEENER  
 DESIGNED BY: SANBORN HEAD  
 BORING LOGS (4 OF 4)  
 PLOT DATE: 1/6/2021  
 DRAWN BY: J.D. KEENER  
 CHECKED BY: R.H. BARNES  
 SHEET 17 OF 38

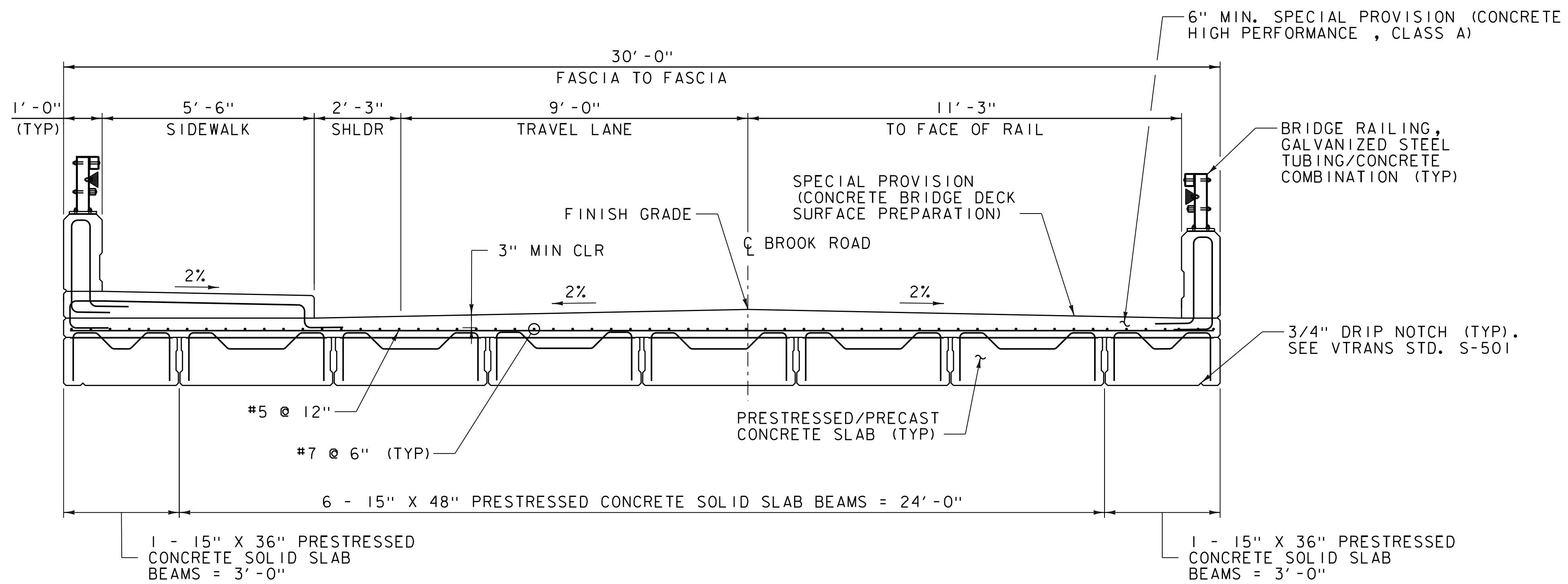




FRAMING PLAN  
SCALE 1/4" = 1' - 0"

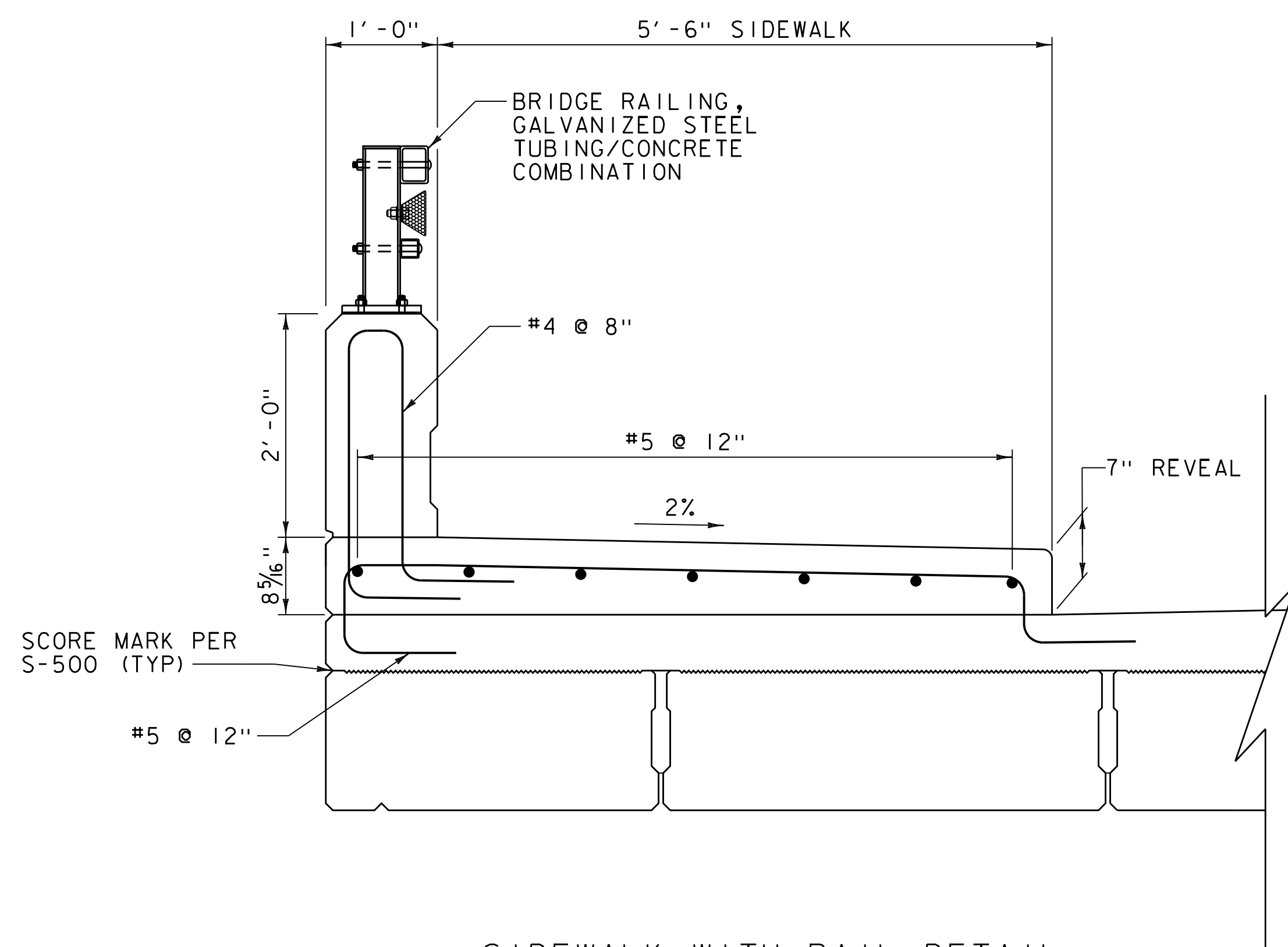
PROJECT NAME:	BROOK ROAD BRIDGE	PLOT DATE:	1/6/2021
PROJECT NUMBER:	58223.00	DRAWN BY:	J.D. KEENER
FILE NAME:	58223.00_sup.dgn	CHECKED BY:	R.H. BARNES
PROJECT LEADER:	J.D. KEENER	FRAMING PLAN	SHEET 18 OF 38
DESIGNED BY:	J.D. KEENER		





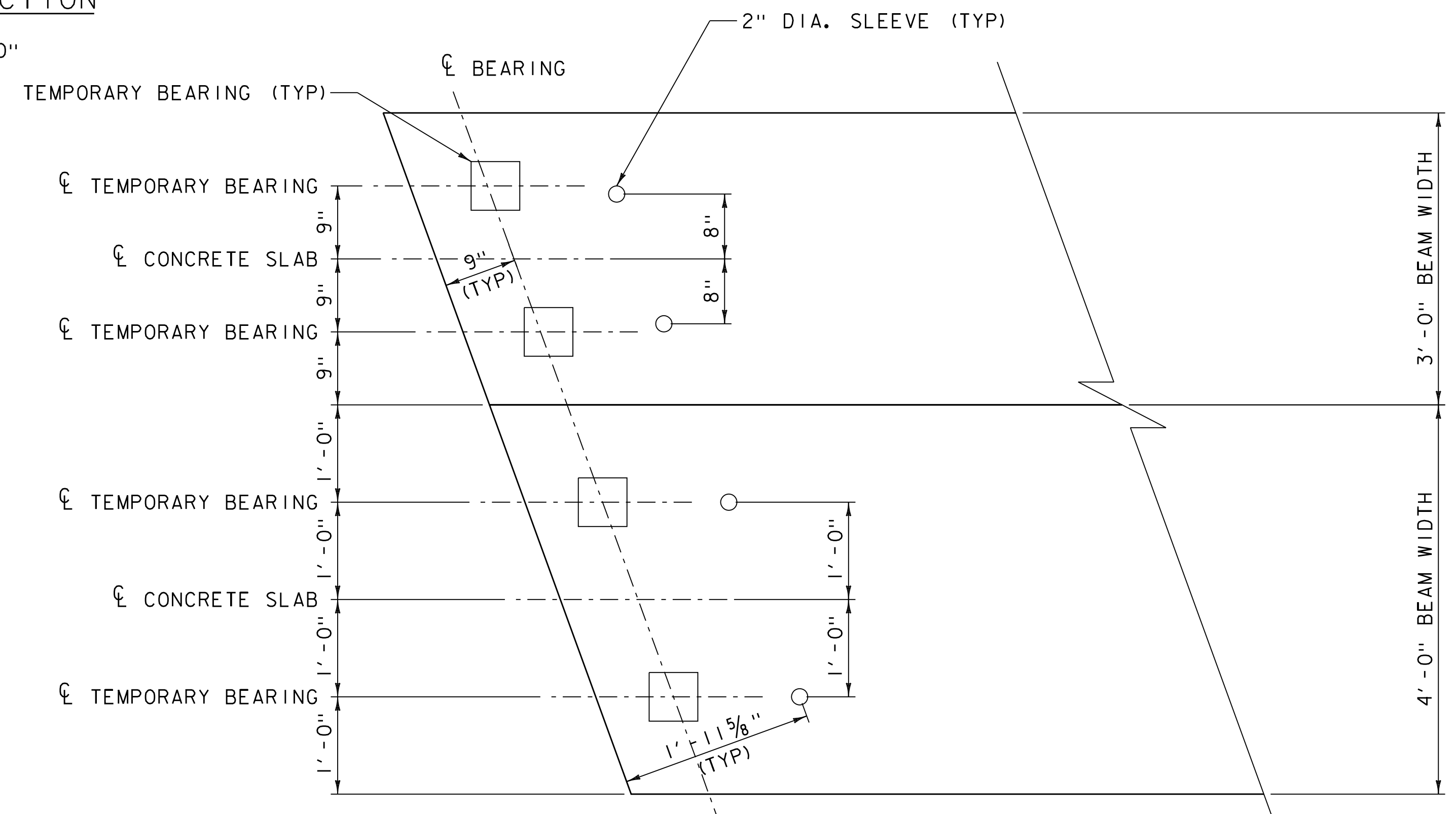
DECK TYPICAL SECTION

SCALE 1/2" = 1'-0"



SIDEWALK WITH RAIL DETAIL

SCALE 1" = 1'-0"



BEAM END PLAN

SCALE 1" = 1'-0"

NOTES:

1. BARS IN STRUCTURAL CONCRETE OVERLAY AND LONGITUDINAL BARS IN BRIDGE RAIL NOT SHOWN FOR CLARITY.
2. SEE STANDARD S-352A FOR ADDITIONAL CONCRETE RAILING REINFORCING.



PROJECT NAME: BROOK ROAD BRIDGE

PROJECT NUMBER: 58223.00

FILE NAME: 58223.00_sup.dgn

PROJECT LEADER: J.D. KEENER

DESIGNED BY: J.D. KEENER

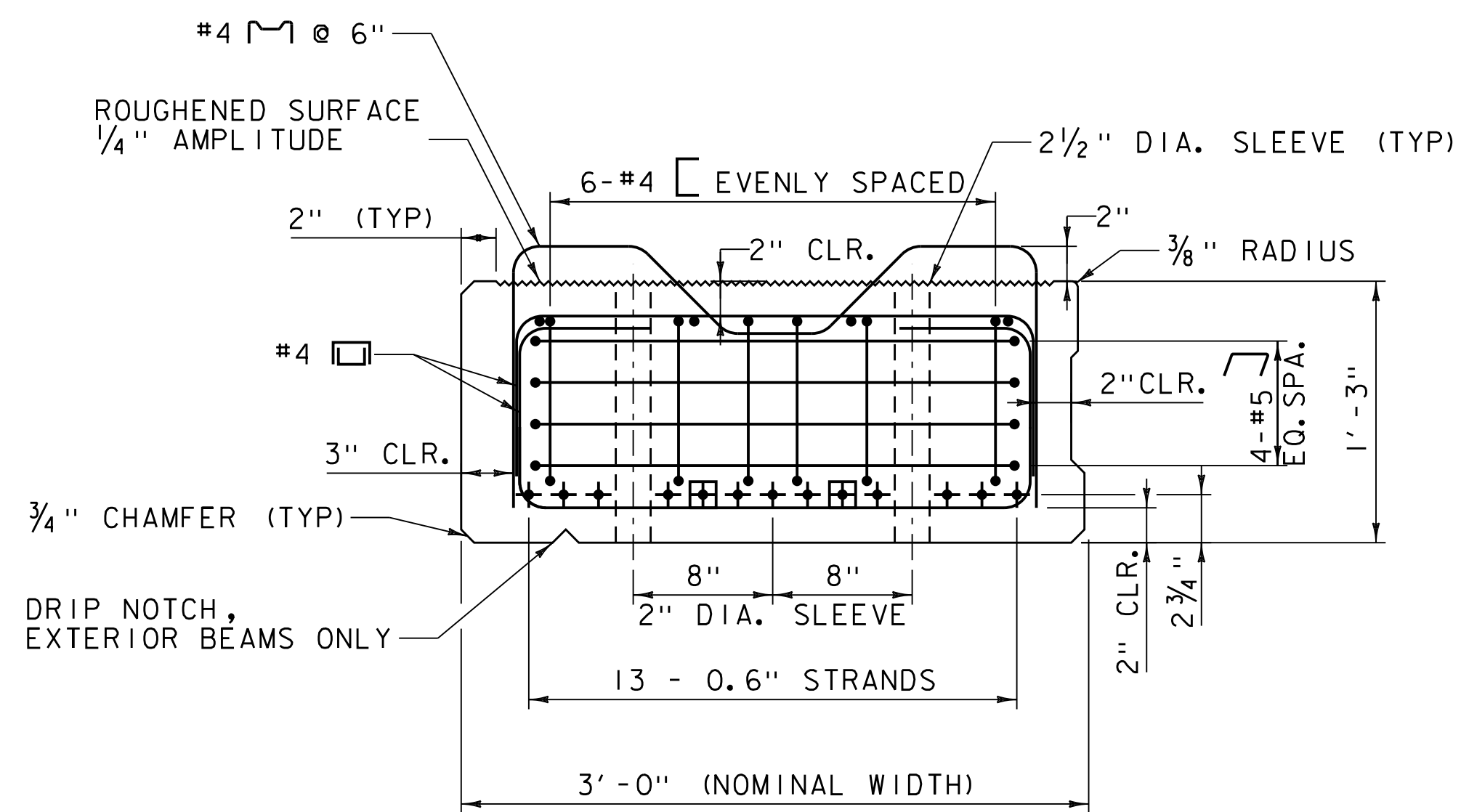
SUPERSTRUCTURE DETAILS (1 OF 4)

PLOT DATE: 1/6/2021

DRAWN BY: N.A. TRUSLOW

CHECKED BY: R.H. BARNES

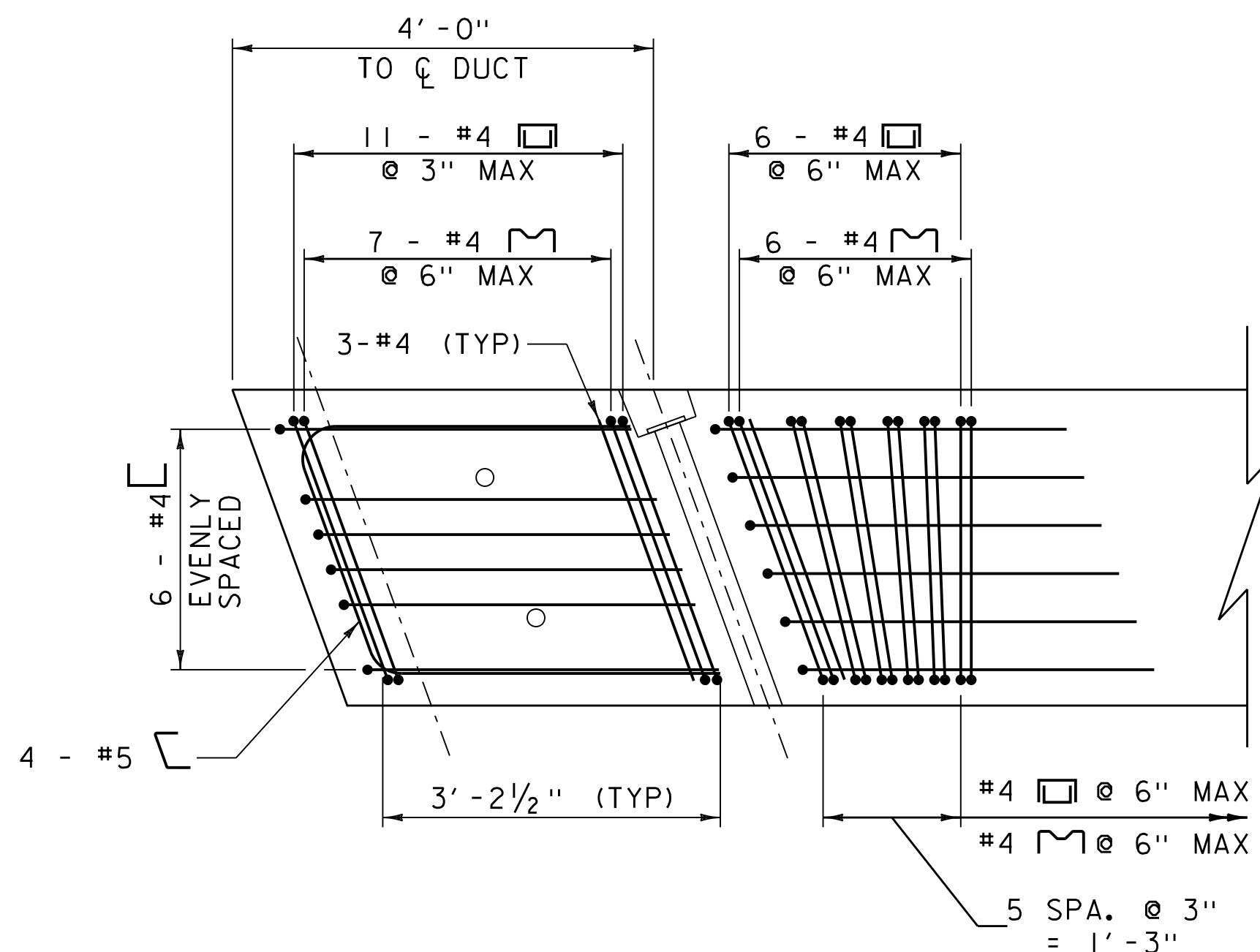
SHEET 19 OF 38



EXTERIOR SLAB END SECTION

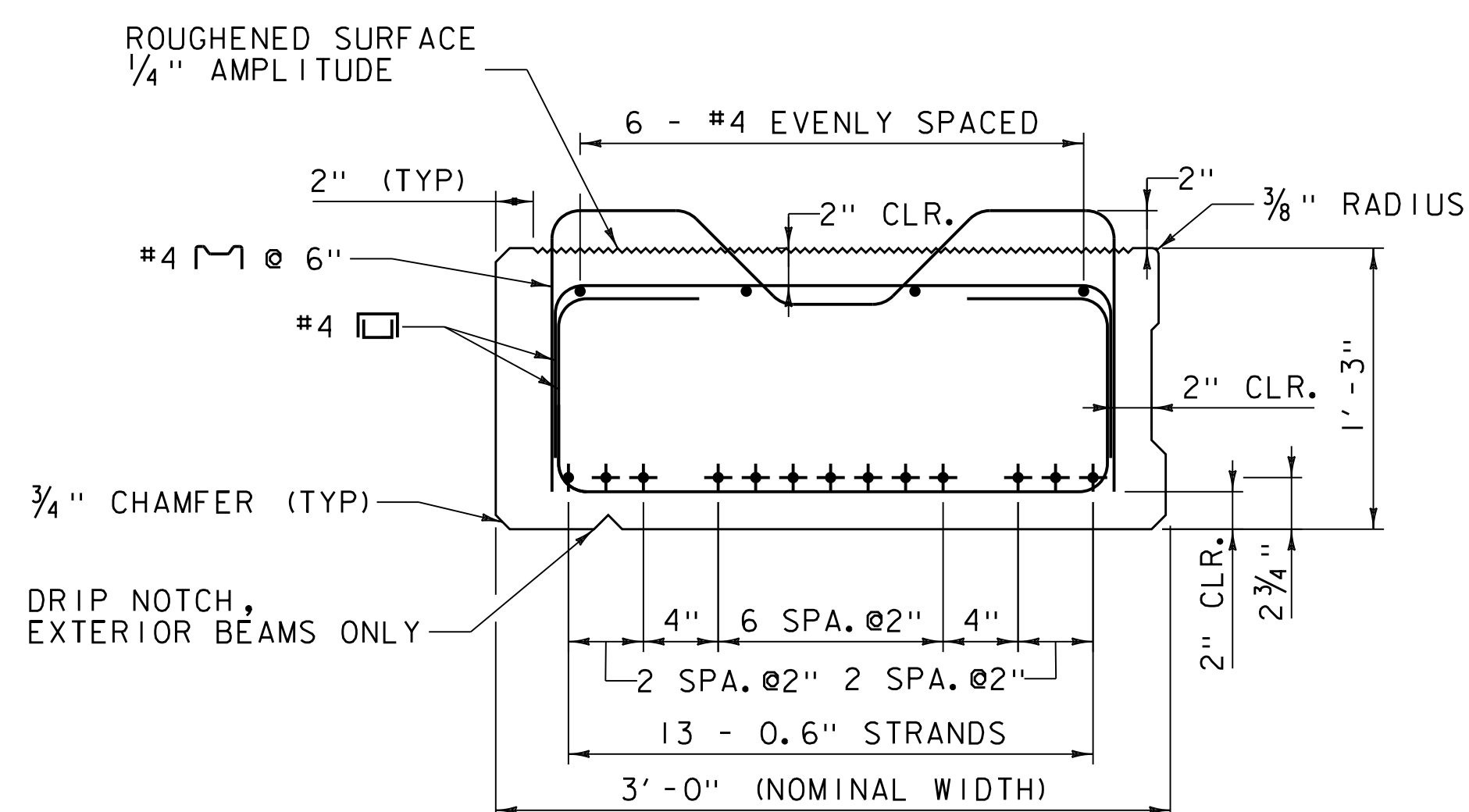
SCALE 1 1/2" = 1'-0"

- ⊕ - 0.6" DIA. STRAND
- ⊞ - 0.6" DIA. STRAND (DEBONDED 2')



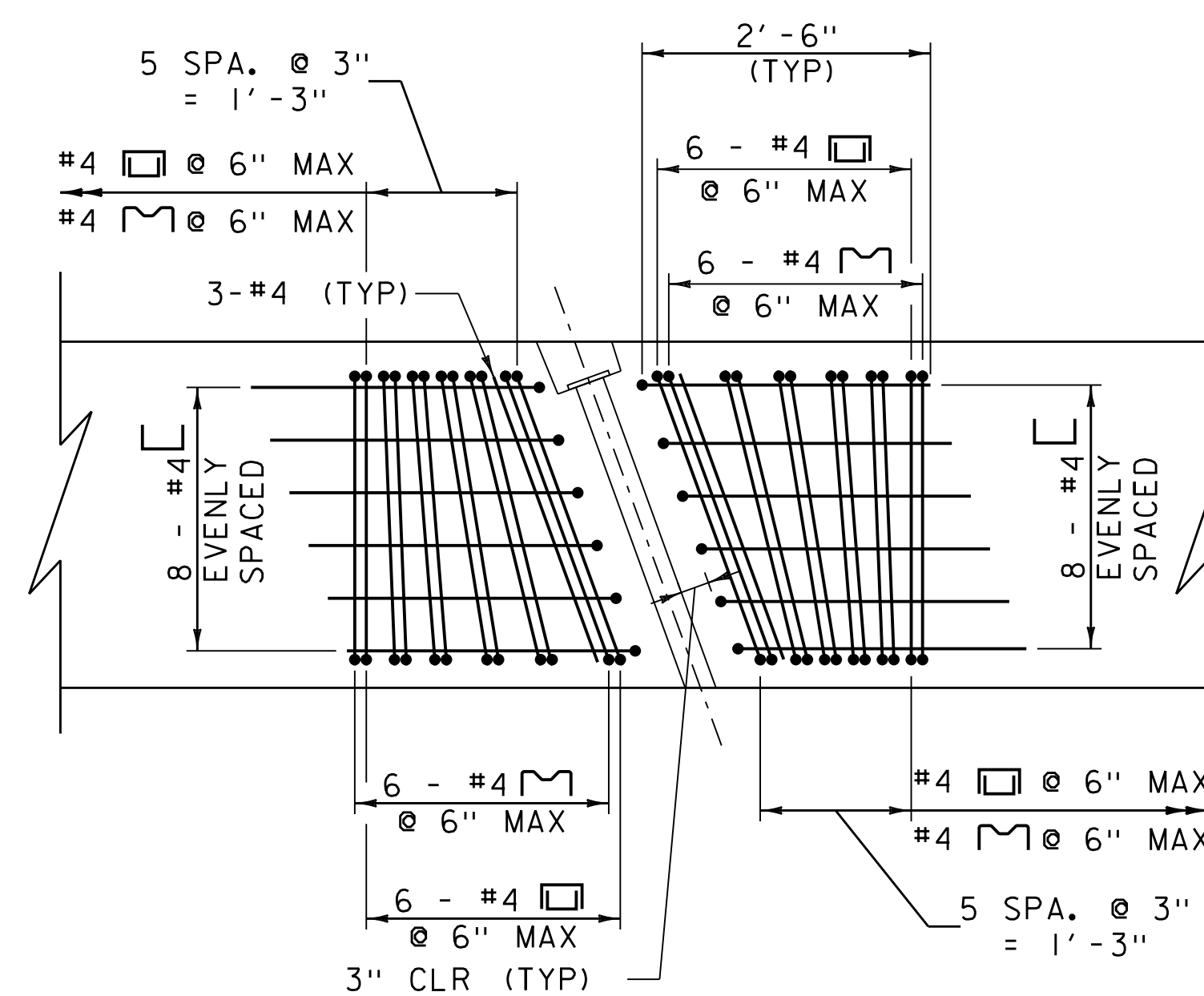
EXTERIOR SLAB TYPICAL END REINFORCING PLAN

SCALE 3/4" = 1'-0"



EXTERIOR SLAB TYPICAL SECTION

SCALE 1 1/2" = 1'-0"



EXTERIOR SLAB TYPICAL TRANSVERSE TENDON REINFORCING PLAN

SCALE 3/4" = 1'-0"



PROJECT NAME: BROOK ROAD BRIDGE

PROJECT NUMBER: 58223.00

FILE NAME: 58223.00_sup.dgn

PROJECT LEADER: J.D. KEENER

DESIGNED BY: J.D. KEENER

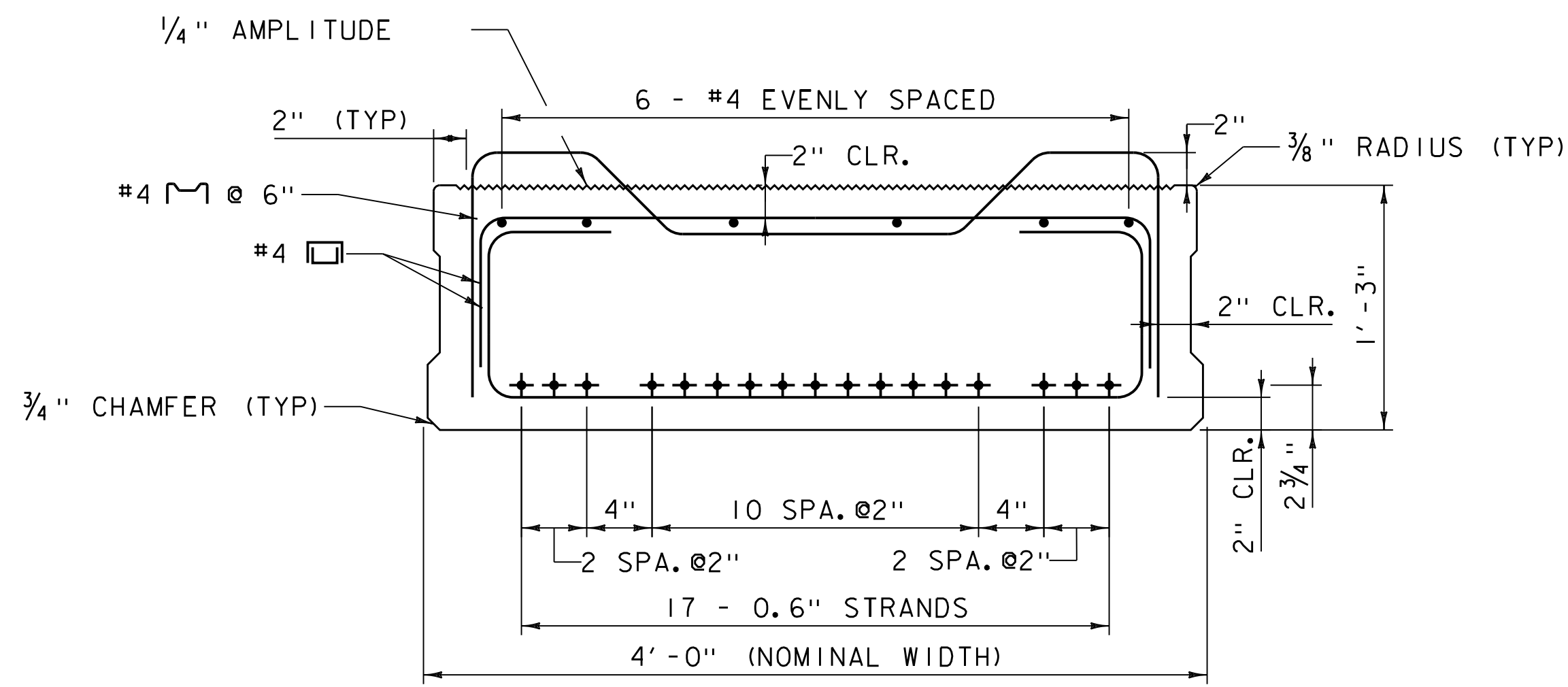
SUPERSTRUCTURE DETAILS (2 OF 4)

PLOT DATE: 1/6/2021

DRAWN BY: N.A. TRUSLOW

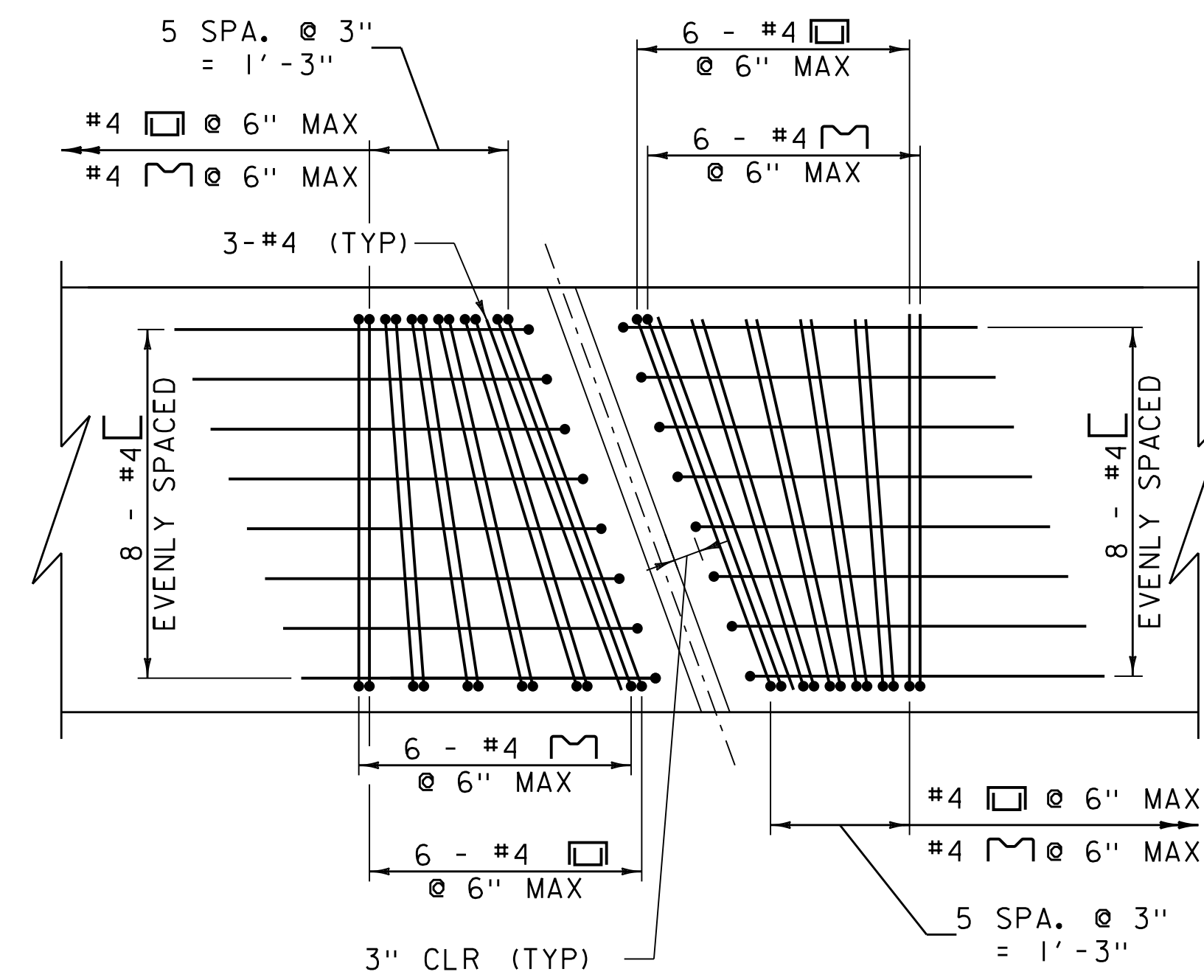
CHECKED BY: R.H. BARNES

SHEET 20 OF 38



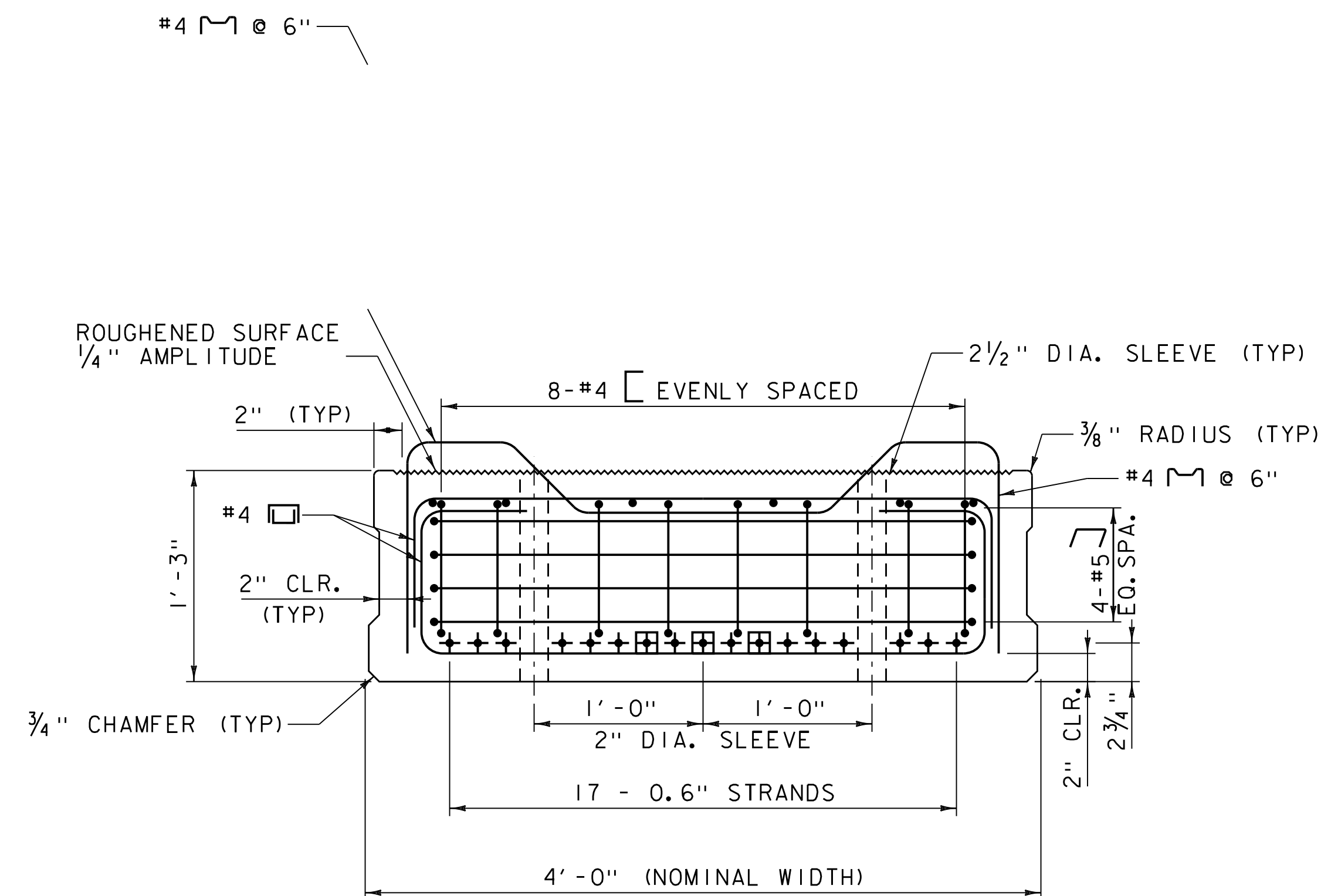
INTERIOR SLAB TYPICAL SECTION

SCALE 1 1/2" = 1'-0"



INTERIOR SLAB TYPICAL TRANSVERSE TENDON REINFORCING PLAN

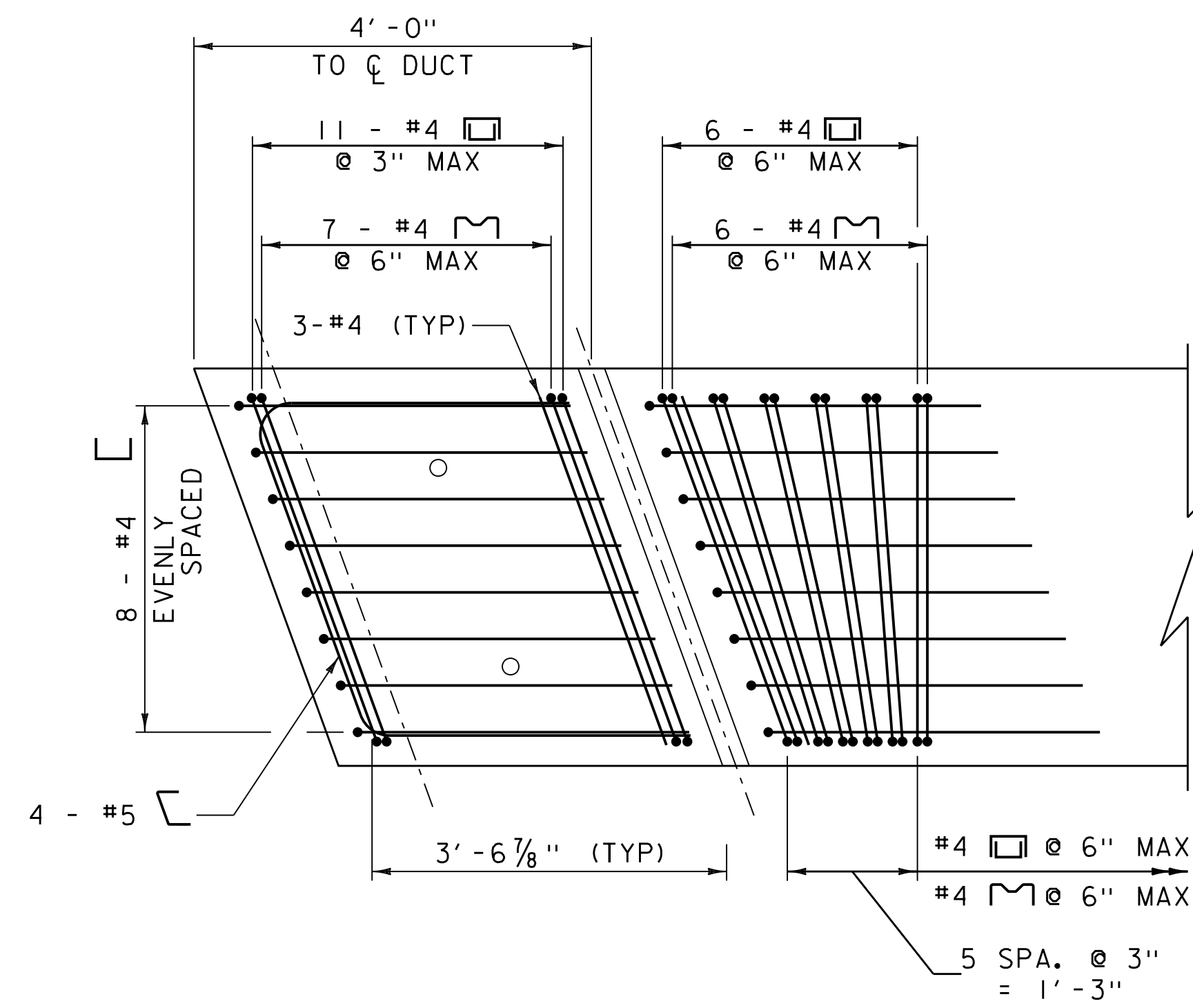
SCALE 3/4" = 1'-0"



INTERIOR SLAB END SECTION

SCALE 1 1/2" = 1'-0"

- + - 0.6" DIA. STRAND
- ⊞ - 0.6" DIA. STRAND (DEBONDED 2')



INTERIOR SLAB TYPICAL END REINFORCING PLAN

SCALE 3/4" = 1'-0"



PROJECT NAME: BROOK ROAD BRIDGE

PROJECT NUMBER: 58223.00

FILE NAME: 58223.00_sup.dgn

PROJECT LEADER: J.D. KEENER

DESIGNED BY: J.D. KEENER

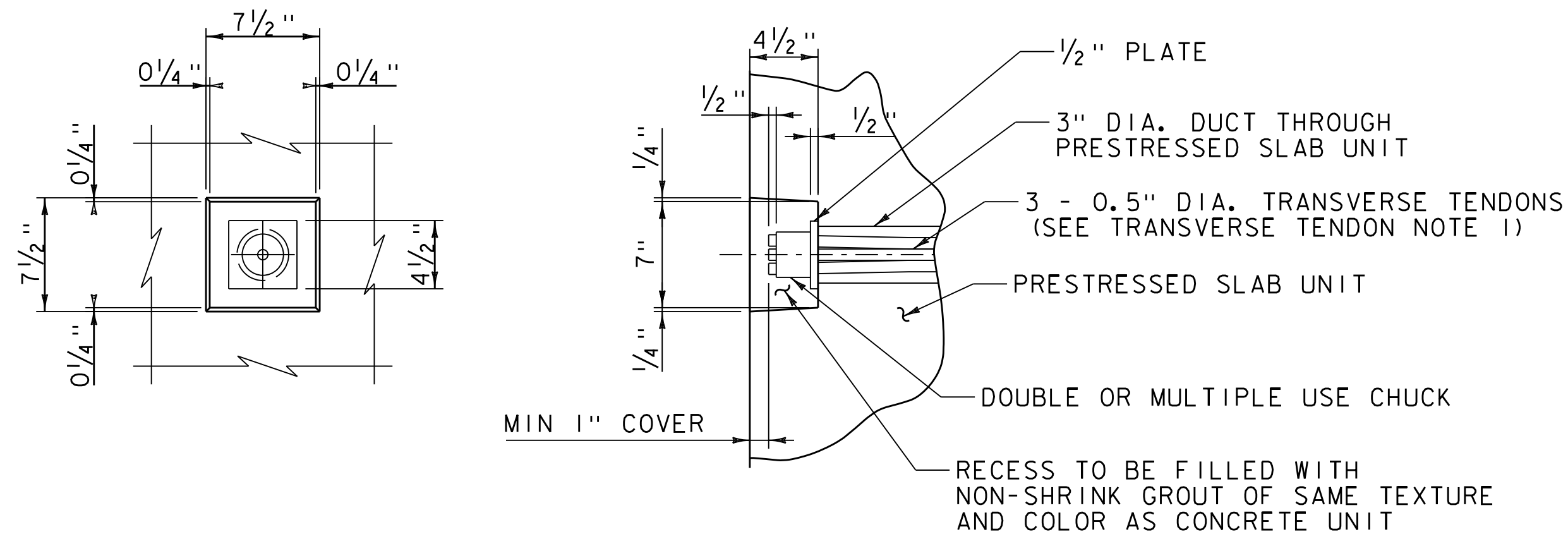
SUPERSTRUCTURE DETAILS (3 OF 4)

PLOT DATE: 1/6/2021

DRAWN BY: N.A. TRUSLOW

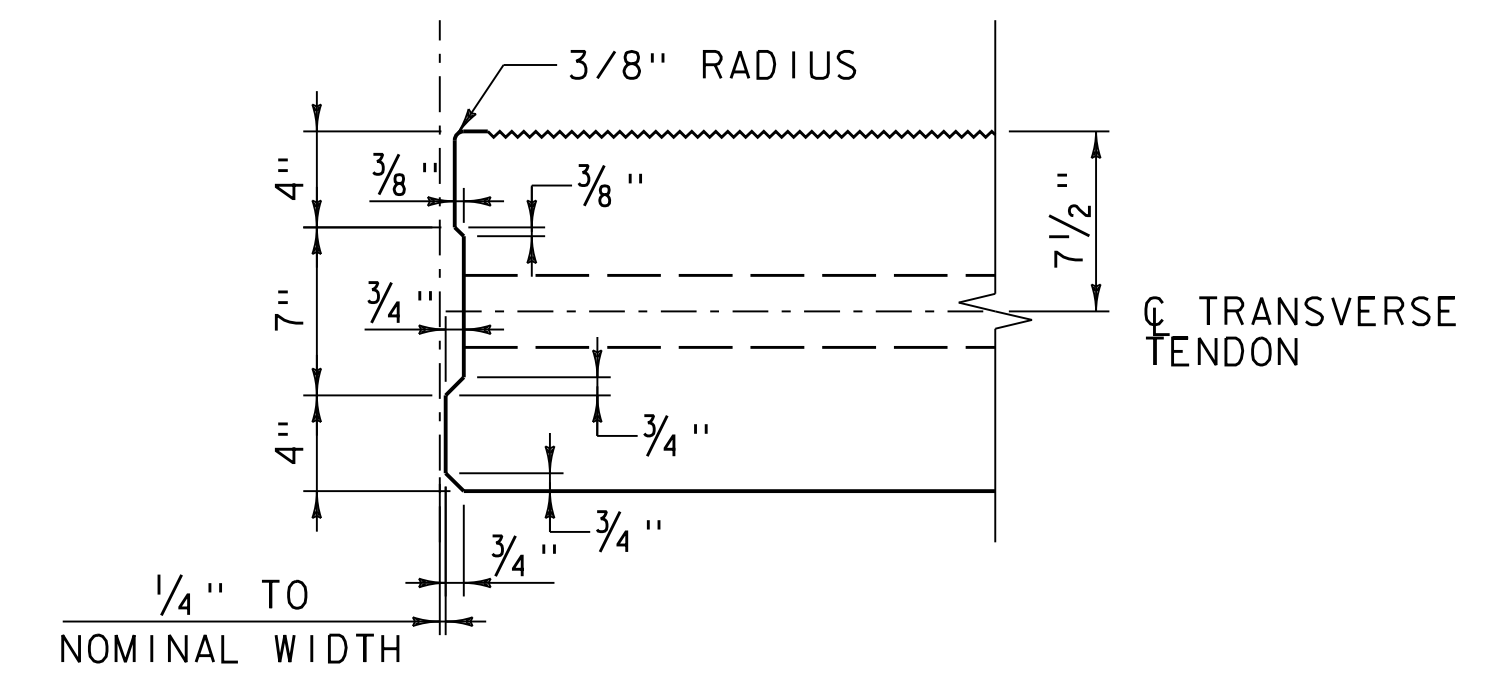
CHECKED BY: R.H. BARNES

SHEET 21 OF 38



TRANSVERSE TENDON ANCHORAGE DETAIL

SCALE 1 1/2" = 1' - 0"

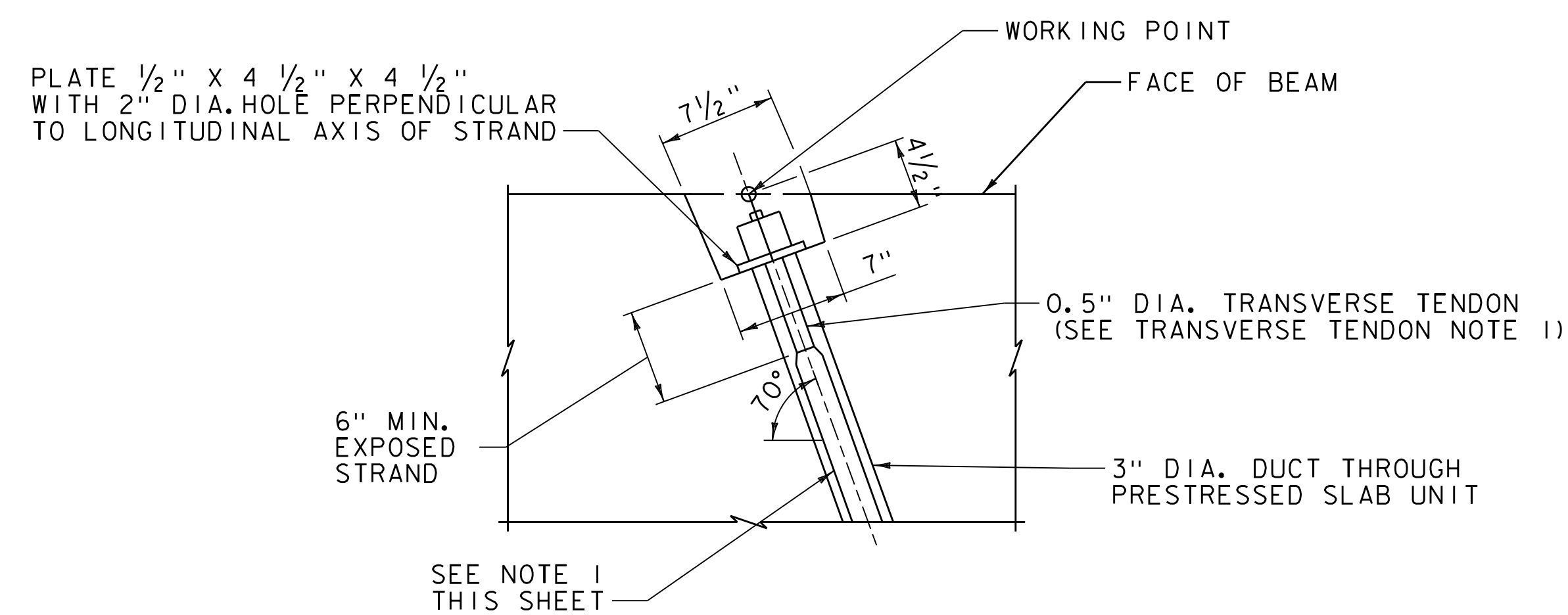


SHEAR KEY DETAIL

SCALE 1 1/2" = 1' - 0"

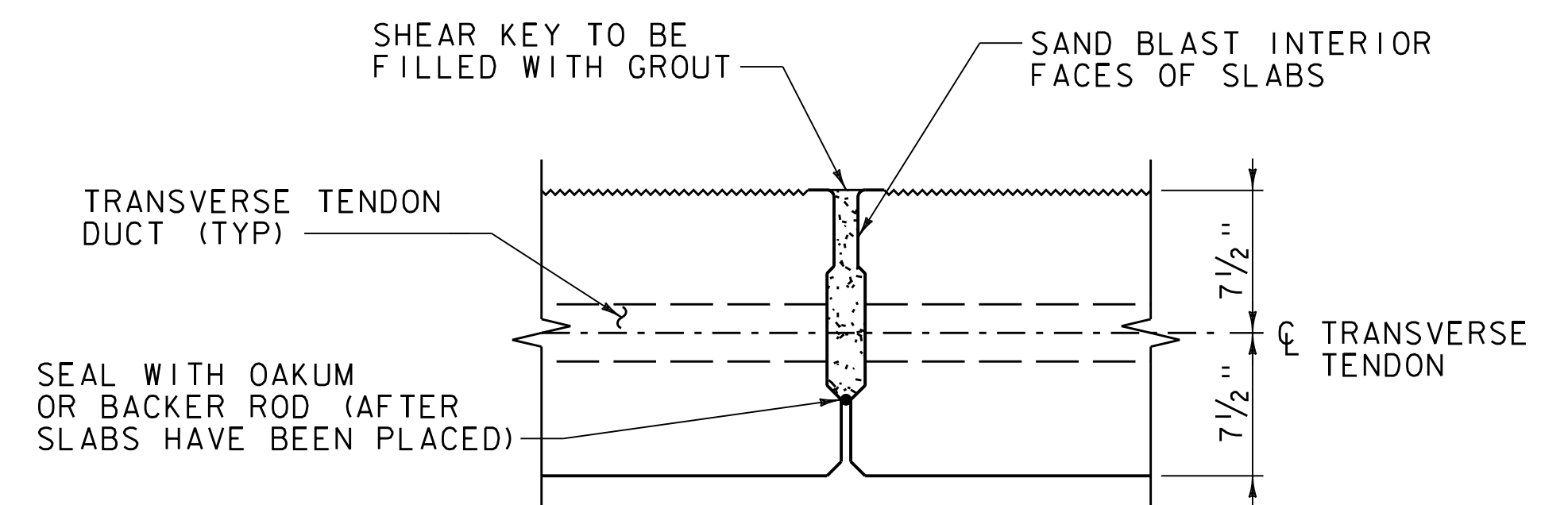
TRANSVERSE TENDON NOTES

1. TRANSVERSE STRANDS SHALL BE COVERED BY SEAMLESS POLYPROPELENE SHEATH (WITH CORROSION INHIBITOR GREASE BETWEEN SHEATH AND STRAND) FOR THE LENGTH OF THE STRAND, EXCEPT AT ANCHORAGE LOCATIONS.
2. STRANDS SHALL BE TENSIONED TO 33 KIPS.
3. ANCHOR PLATES SHALL CONFORM TO AASHTO M 270, GRADE 50 AND BE GALVANIZED IN ACCORDANCE WITH AASHTO M 111.



PLAN OF TRANSVERSE POST TENSIONING POCKET

SCALE 1 1/2" = 1' - 0"



SLAB SHEAR KEY

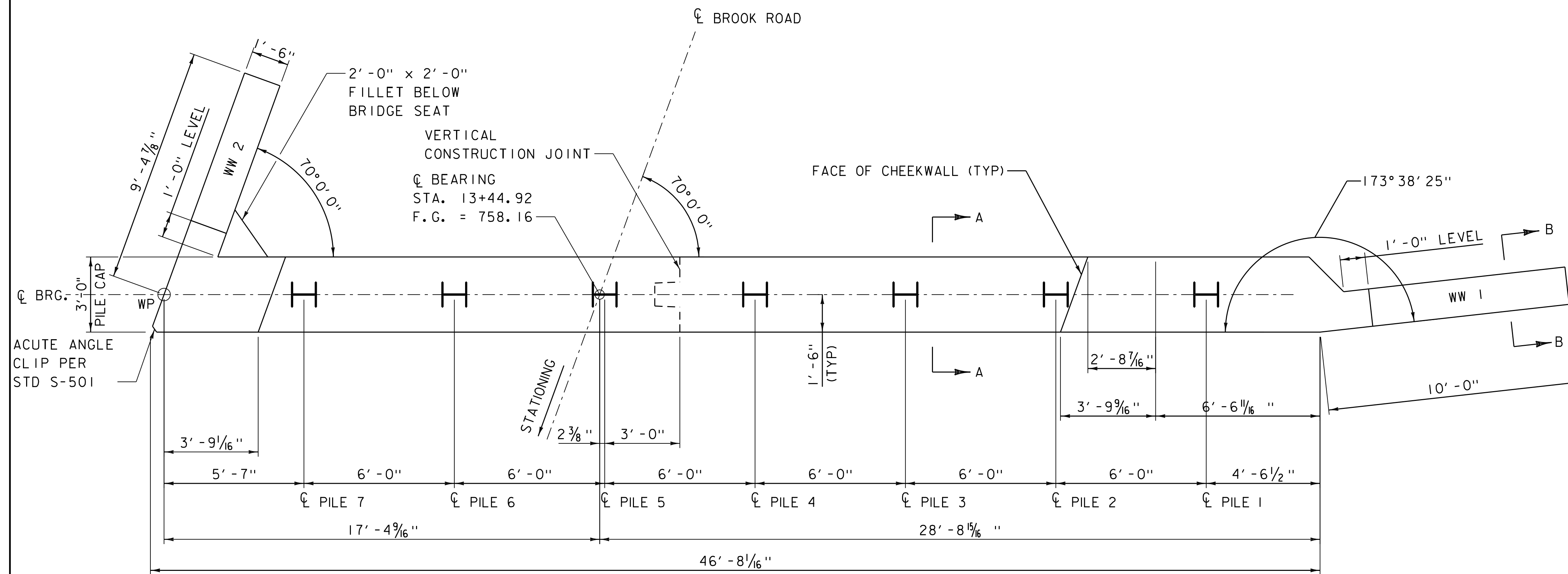
SCALE 1 1/2" = 1' - 0"

PROJECT NAME: BROOK ROAD BRIDGE  
PROJECT NUMBER: 58223.00

FILE NAME: 58223.00_sup.dgn  
PROJECT LEADER: J.D. KEENER  
DESIGNED BY: J.D. KEENER  
SUPERSTRUCTURE DETAILS (4 OF 4)

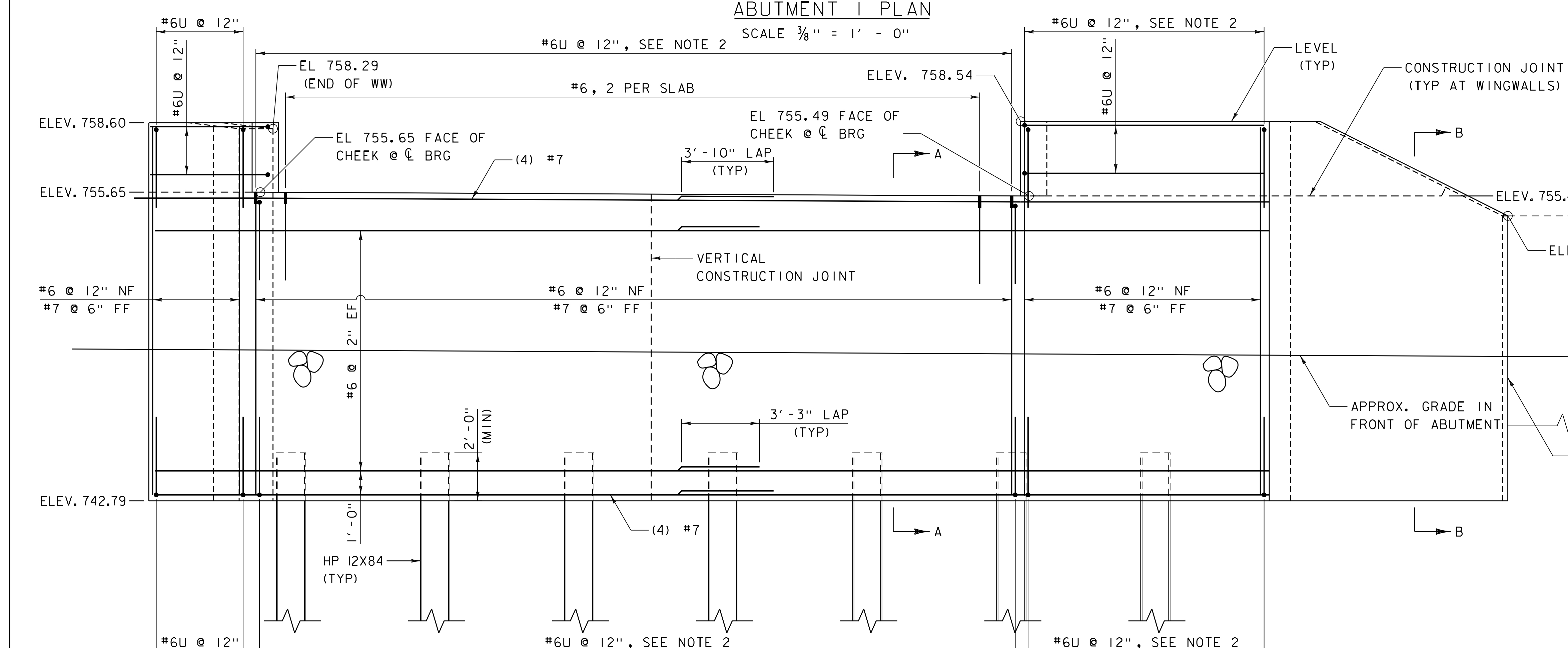
PLOT DATE: 1/6/2021  
DRAWN BY: N.A. TRUSLOW  
CHECKED BY: R.H. BARNES  
SHEET 22 OF 38





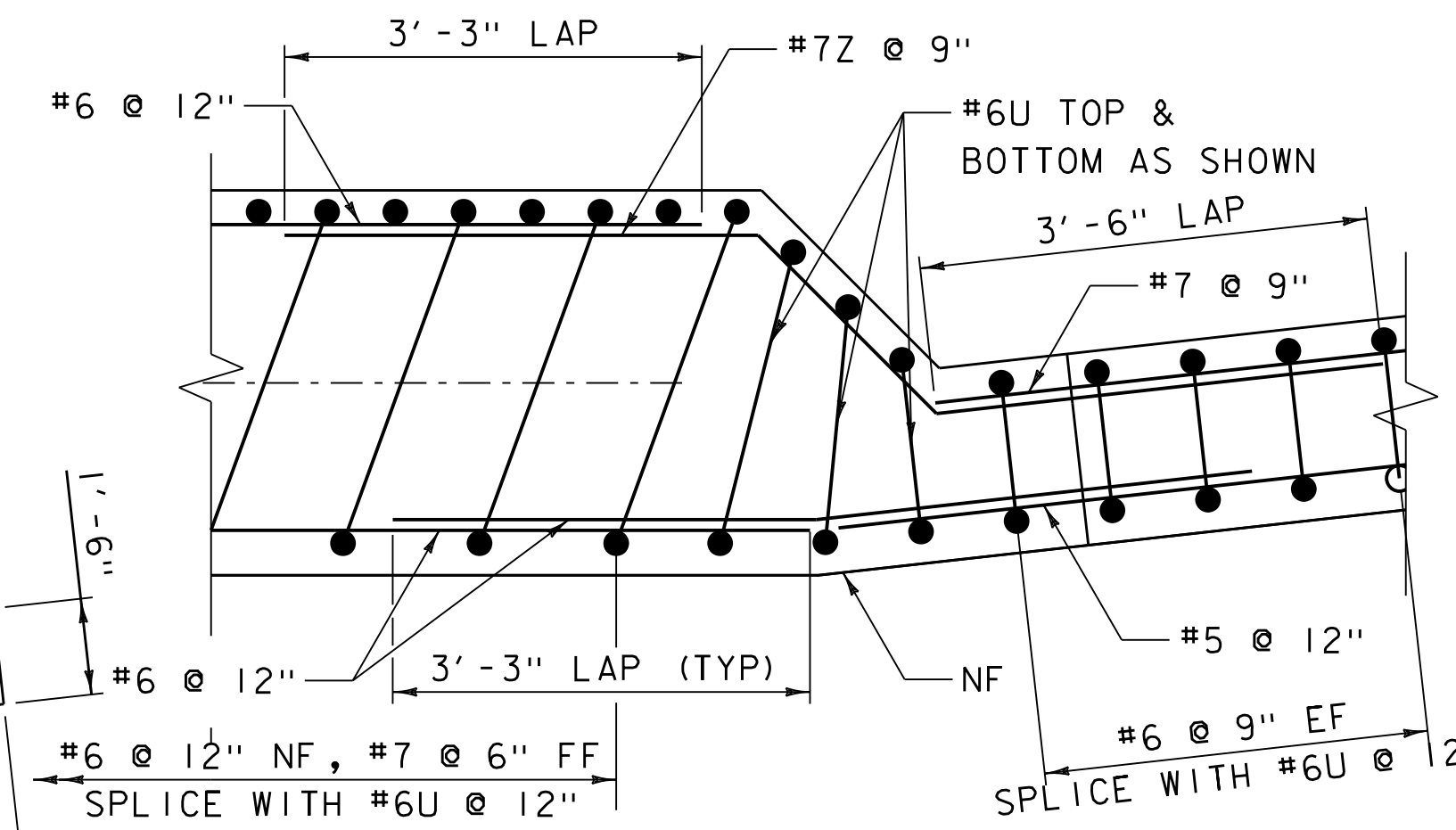
ABUTMENT I PLAN

SCALE 3/8" = 1' - 0"



ABUTMENT I ELEVATION

SCALE 3/8" = 1' - 0"



WINGWALL NO. 1 CORNER DETAIL

NOT TO SCALE

NOTES

1. SEE ABUTMENT DETAILS (3 OF 3) FOR SECTIONS A-A AND B-B. SECTION B-B APPLIES TO ALL WINGWALLS.
2. ADJUST SPACING OF U-BARS AND ASSOCIATED VERTICAL BARS AS NECESSARY TO CLEAR PILES.
3. REINFORCING NOT SHOWN IN PLAN VIEW. WINGWALL AND FILLET REINFORCING NOT SHOWN IN ELEVATION VIEW.
4. SEE ABUTMENT DETAILS (2 OF 3) FOR WINGWALL NO. 2 CORNER DETAIL.

NOTE:

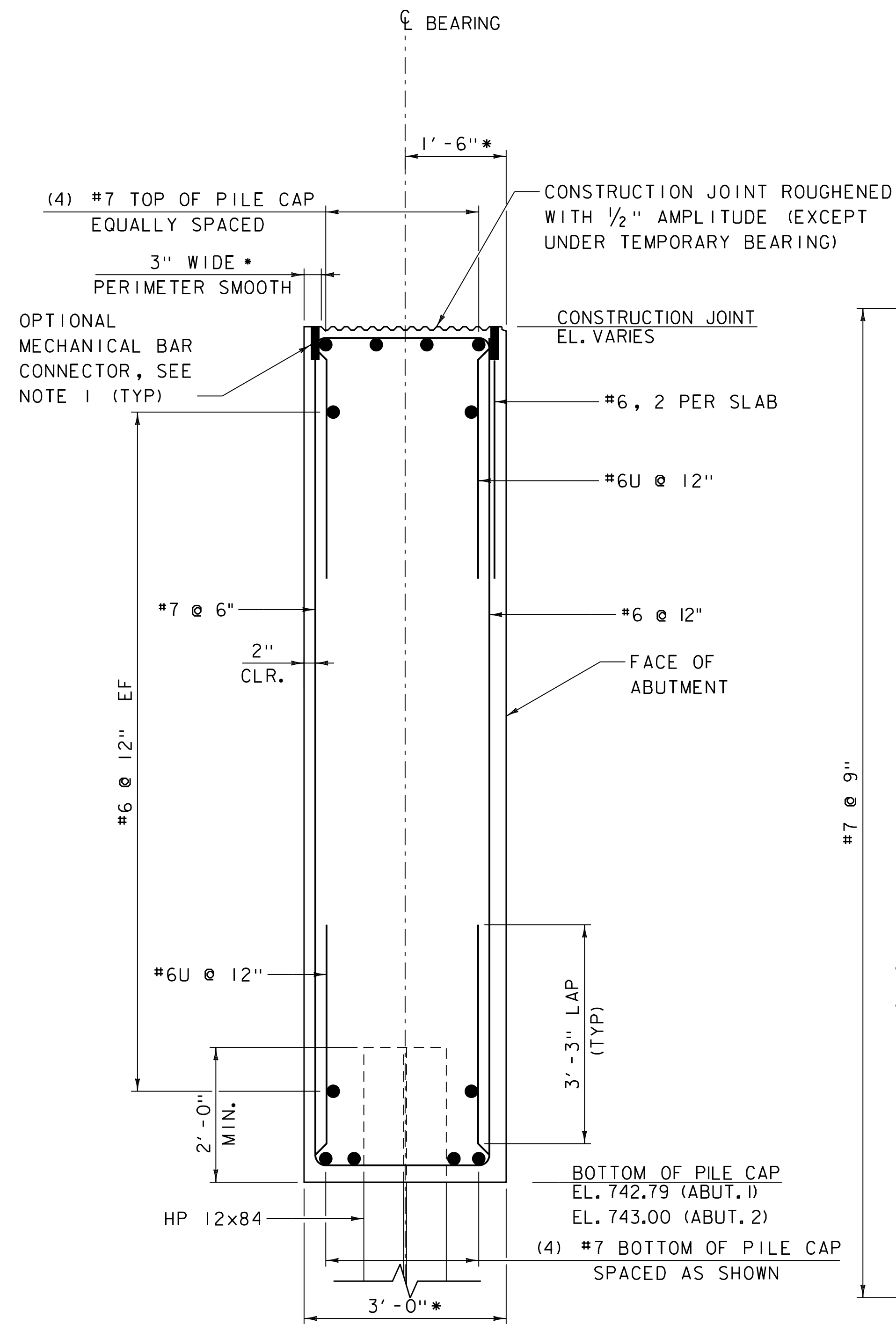
- NF = NEAR FACE
- FF = FAR FACE
- EF = EACH FACE
- ▲ = CUT TO FIT IN FIELD
- 3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
- 2'-2" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.

PROJECT NAME:	BROOK ROAD BRIDGE
PROJECT NUMBER:	58223.00
FILE NAME:	58223.00_SUB.dgn
PROJECT LEADER:	J.D. KEENER
DESIGNED BY:	R.H. BARNES
ABUTMENT DETAILS (1 OF 3)	
PLOT DATE:	1/6/2021
DRAWN BY:	J.D. KEENER
CHECKED BY:	J.D. KEENER
SHEET	23 OF 38





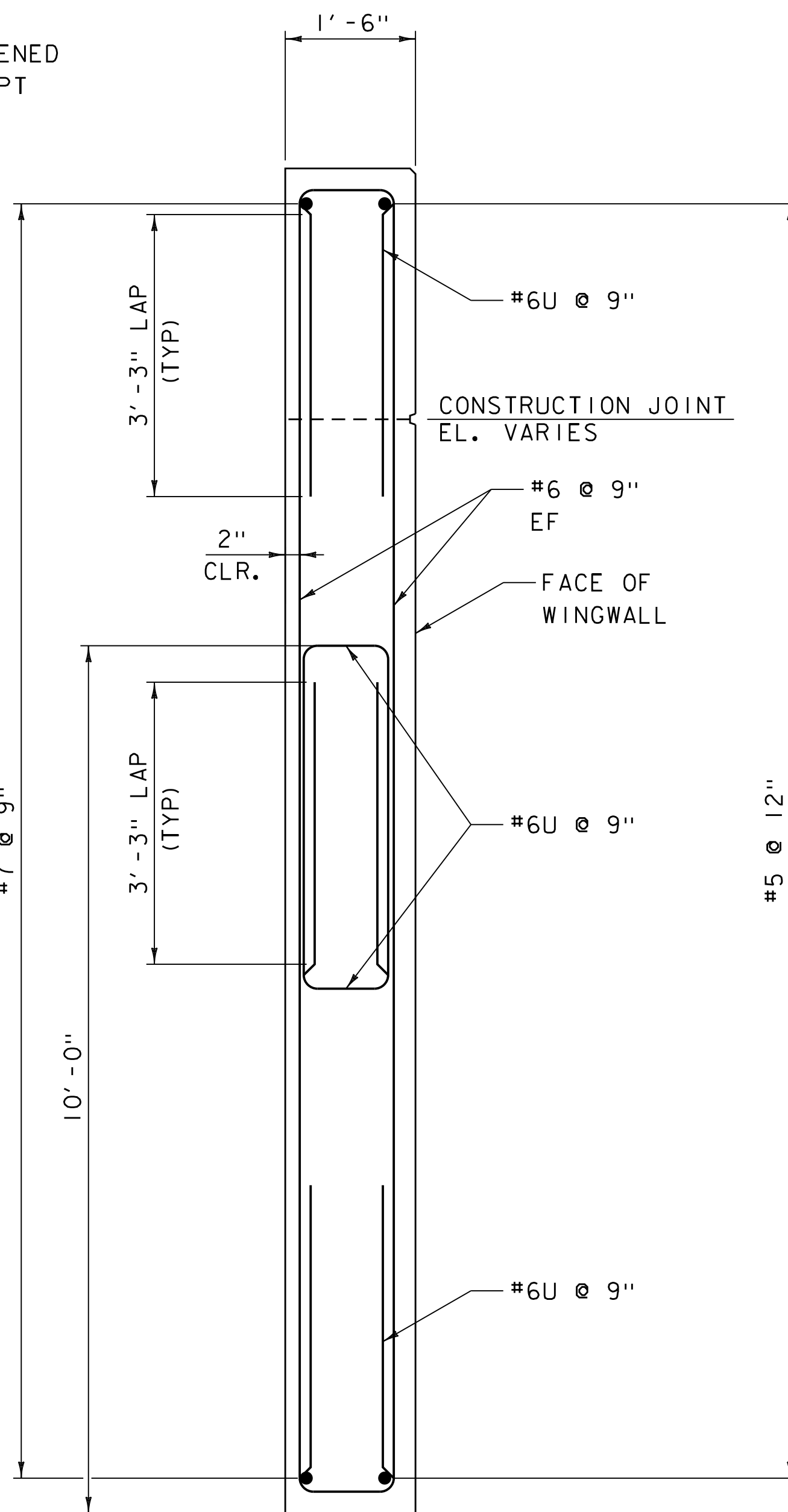




SECTION A-A  
SCALE 1/2" = 1' - 0"

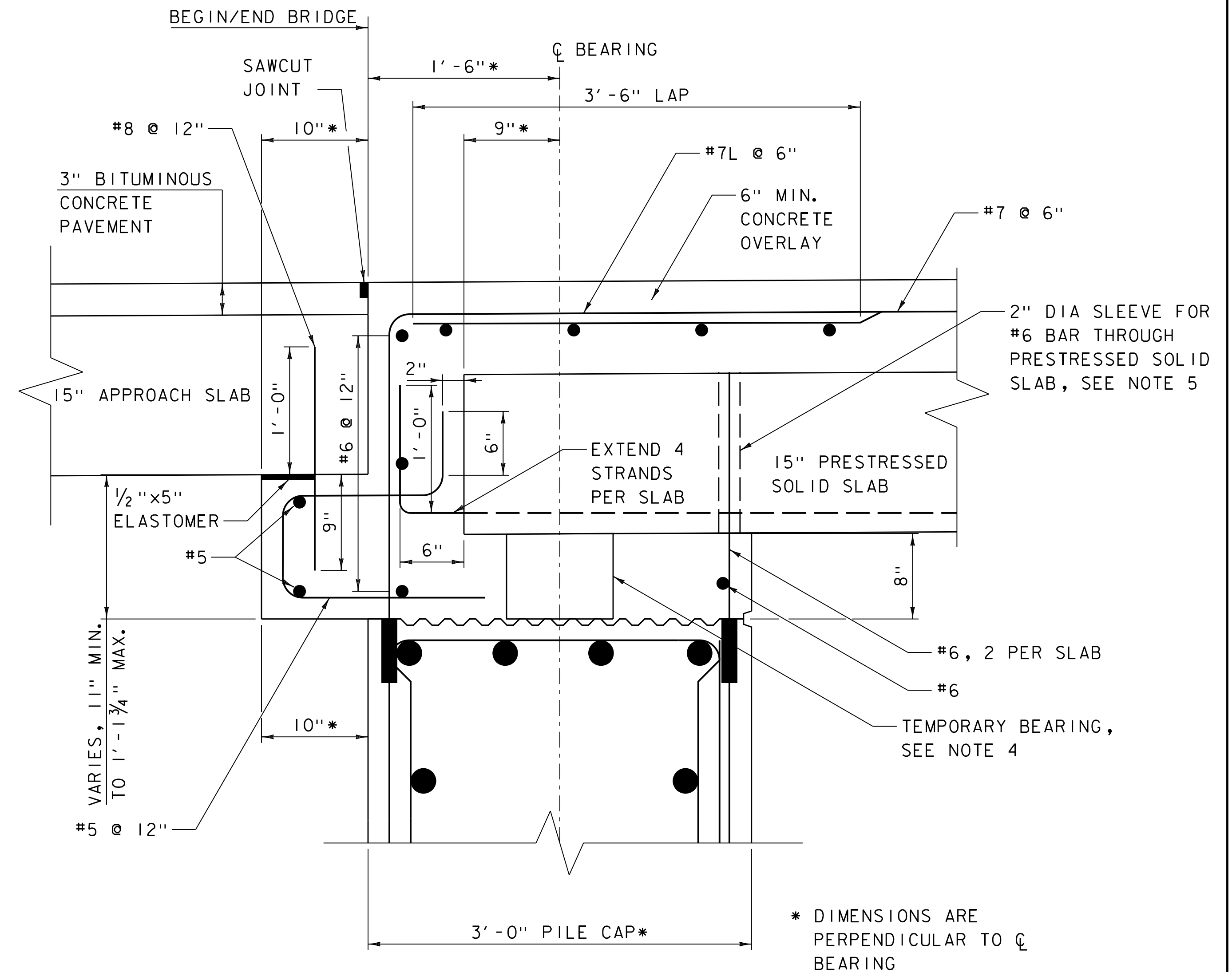
NOTE: SUPERSTRUCTURE, APPROACH SLAB AND BACKWALL NOT SHOWN IN SECTION A-A.

* DIMENSIONS ARE PERPENDICULAR TO  $\phi$  BEARING



SECTION B-B  
SCALE 1/2" = 1' - 0"

NOTE:  
NF = NEAR FACE  
FF = FAR FACE  
EF = EACH FACE  
▲ = CUT TO FIT IN FIELD  
3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.  
2'-2" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.



BRIDGE END DETAIL  
SCALE 3" = 1' - 0"

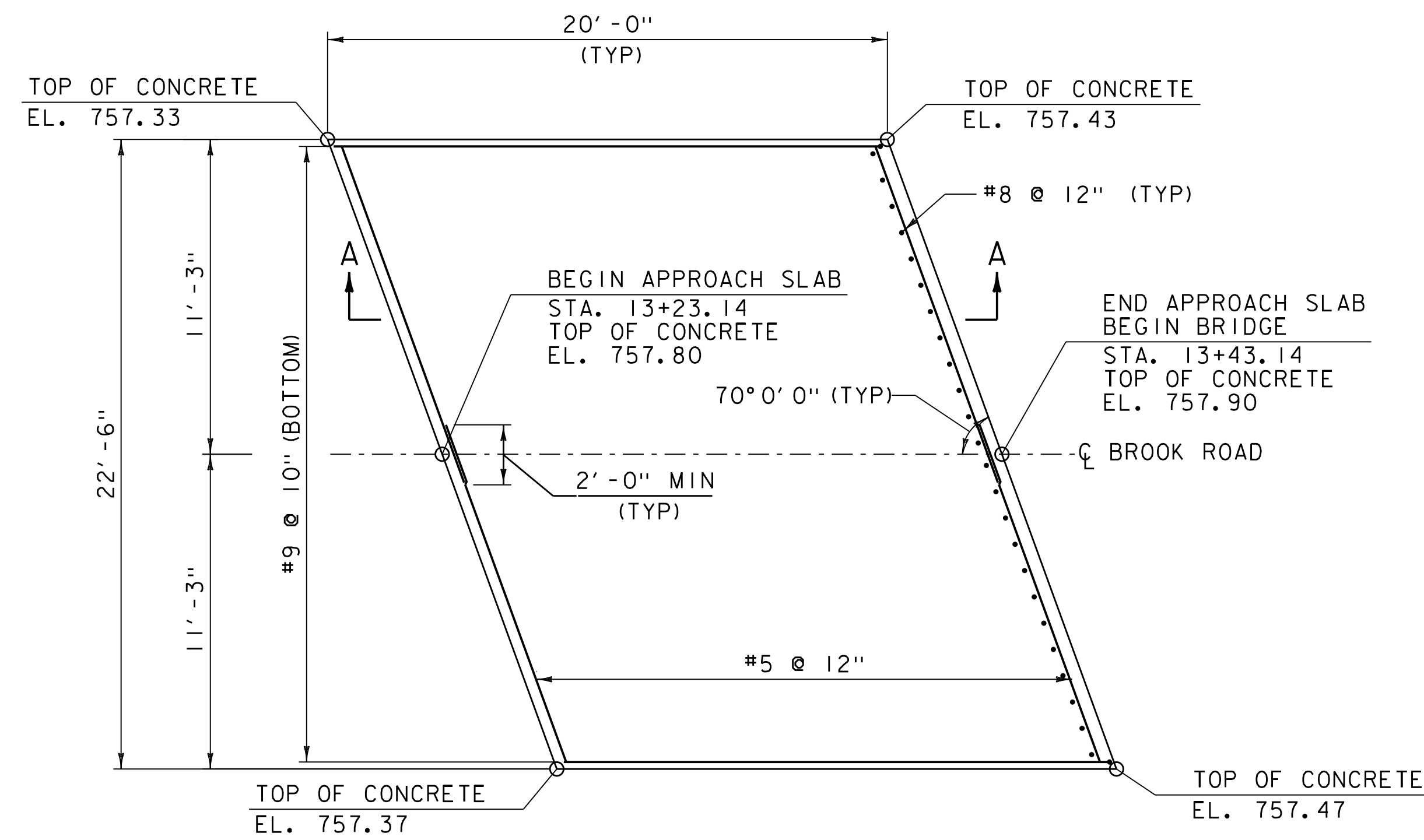
* DIMENSIONS ARE PERPENDICULAR TO  $\phi$  BEARING

NOTES

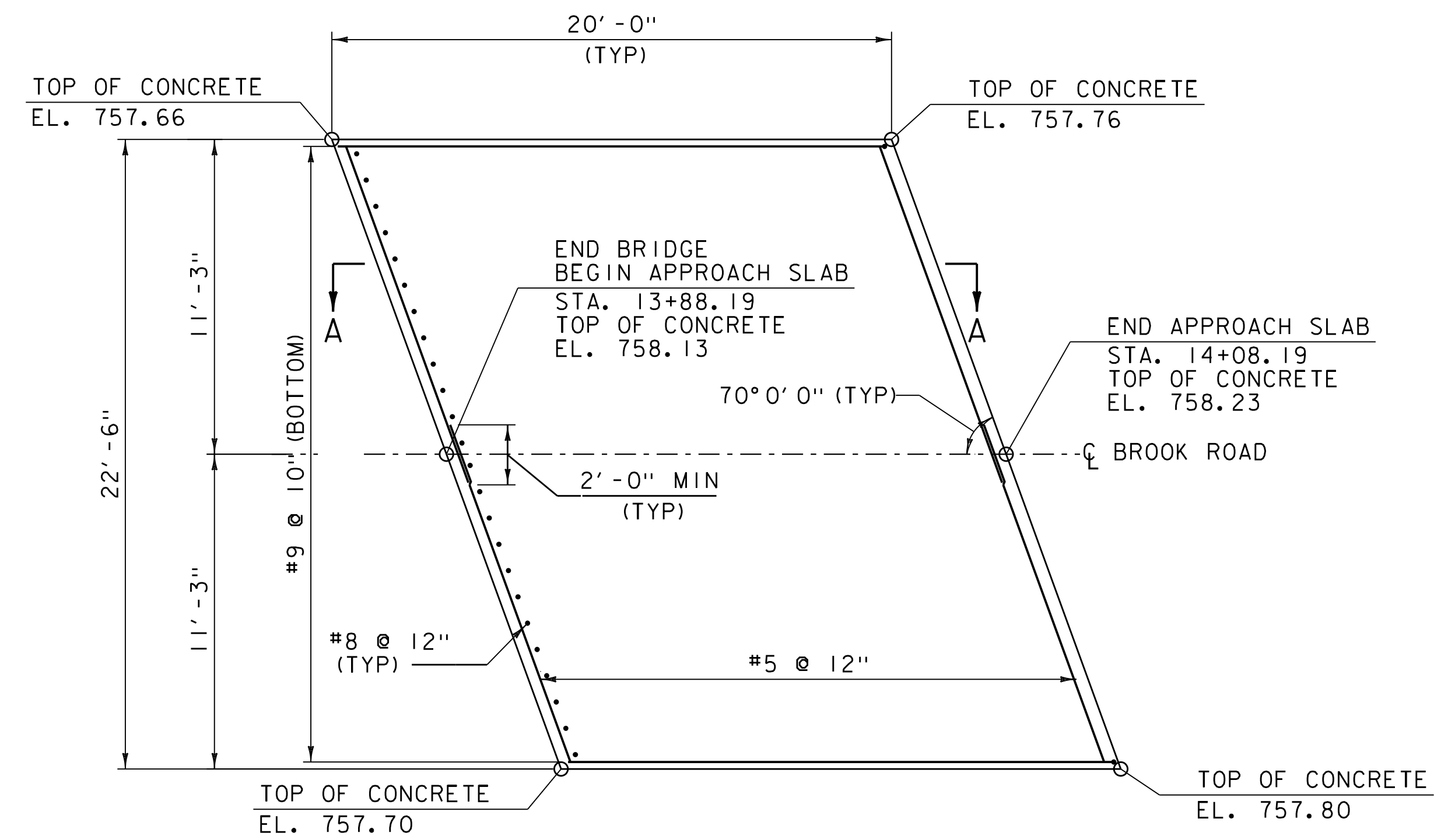
1. PAYMENT FOR OPTIONAL MECHANICAL BAR CONNECTORS WILL NOT BE MADE SEPARATELY BUT WILL BE CONSIDERED INCIDENTAL TO ITEM 507.11, "REINFORCING STEEL, LEVEL 1". MECHANICAL BAR CONNECTORS EMBEDDED WITHIN THE PILE CAP SHALL BE UNCOATED.
2. SEE STANDARD S-500 FOR CONSTRUCTION JOINT AND SCORE MARK DETAILS.
3. ALL TRANSVERSE REINFORCING IN THE PILE CAPS SHALL BE PLACED PARALLEL TO THE CENTERLINE OF BROOK ROAD AND SPACED PERPENDICULAR TO THE CENTERLINE OF BROOK ROAD.
4. TEMPORARY BEARING SHALL BE CONCRETE, HDPE OR OTHER MATERIAL AS APPROVED BY THE ENGINEER. TEMPORARY BEARING SHALL BE OF ADEQUATE SIZE TO SUPPORT THE PRESTRESSED SLABS, CONCRETE OVERLAY, AND CONCRETE BACKWALL CONCRETE UNTIL IT CURES AND FORMS THE INTEGRAL CONNECTION. THE CONTRACTOR SHALL SUBMIT CALCULATIONS AND DETAILS FOR THE TEMPORARY BEARING TO THE ENGINEER.
5. #6 BAR SHALL BE INSTALLED IN SLEEVE, AND SLEEVE SHALL BE GROUTED PRIOR TO PLACEMENT OF OVERLAY AND BACKWALL CONCRETE. COST FOR PLACEMENT OF GROUT WILL BE CONSIDERED INCIDENTAL TO PRESTRESSED CONCRETE SOLID SLAB ITEMS.



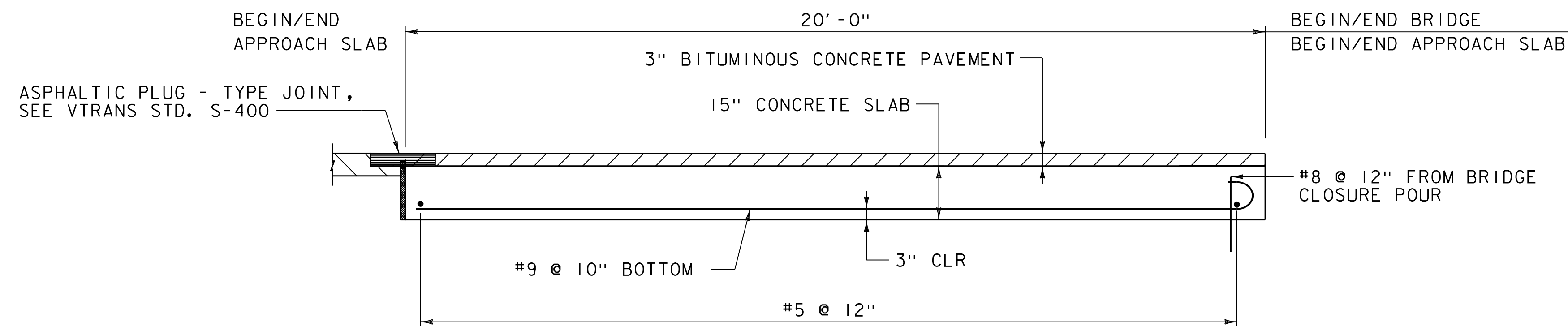
PROJECT NAME:	BROOK ROAD BRIDGE
PROJECT NUMBER:	58223.00
FILE NAME:	58223.00_SUB.dgn
PROJECT LEADER:	J.D. KEENER
DESIGNED BY:	R.H. BARNES
ABUTMENT DETAILS (3 OF 3)	
PLOT DATE:	1/6/2021
DRAWN BY:	J.D. KEENER
CHECKED BY:	J.D. KEENER
SHEET	25 OF 38



APPROACH SLAB NO. 1 PLAN  
SCALE 1/4" = 1'-0"



APPROACH SLAB NO. 2 PLAN  
SCALE 1/4" = 1'-0"



SECTION A-A  
SCALE 1/2" = 1'-0"

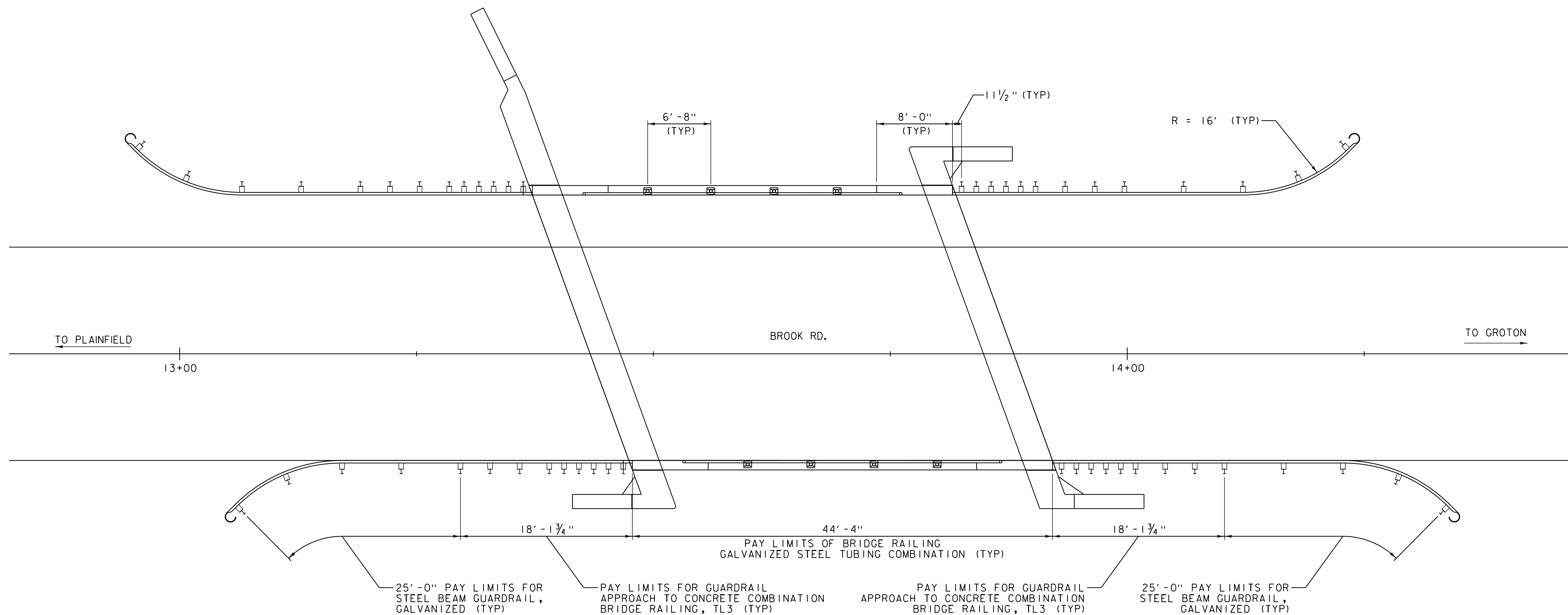
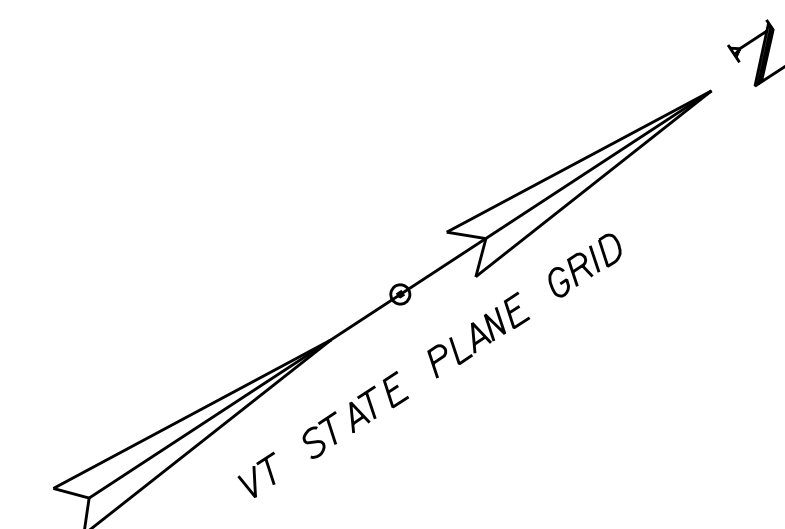
**NOTE:**  
3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.  
2'-2" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.

PROJECT NAME: BROOK ROAD BRIDGE  
PROJECT NUMBER: 58223.00

FILE NAME: 58223.00_app.dgn  
PROJECT LEADER: J.D. KEENER  
DESIGNED BY: J.D. KEENER  
APPROACH SLAB DETAILS

PLOT DATE: 1/6/2021  
DRAWN BY: N.A. TRUSLOW  
CHECKED BY: R.H. BARNES  
SHEET 26 OF 38





PLAN VIEW  
SCALE 3/16" = 1'-0"

NOTE: SEE VTRANS STANDARD G-1D FOR STEEL BEAM GUARDRAIL END TERMINAL DETAILS.

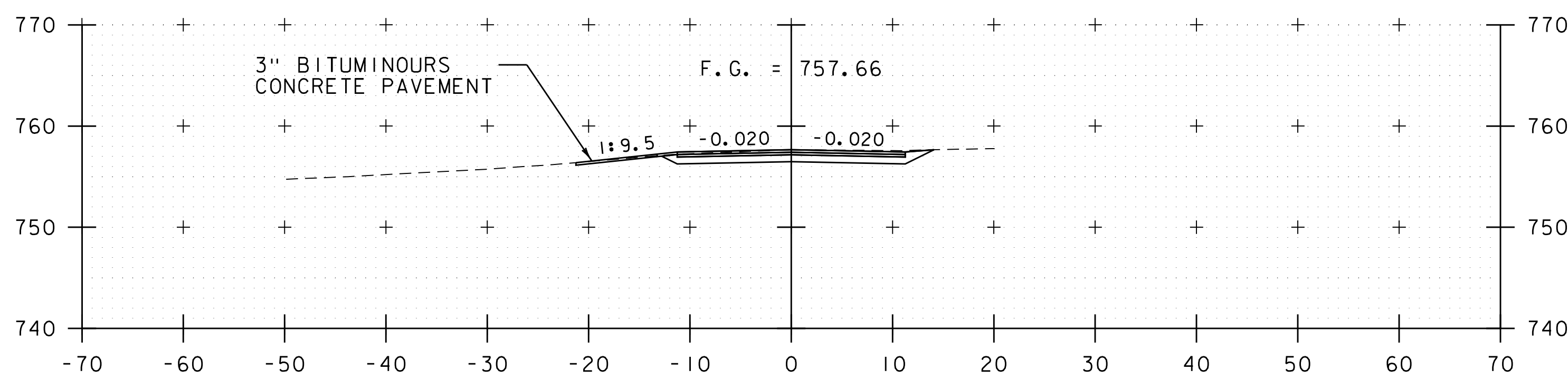
PROJECT NAME: BROOK ROAD BRIDGE  
PROJECT NUMBER: 58223.00

FILE NAME: 58223.00_brail.dgn  
PROJECT LEADER: J.D. KEENER  
DESIGNED BY: J.D. KEENER  
BRIDGE RAILING AND GUARDRAIL LAYOUT

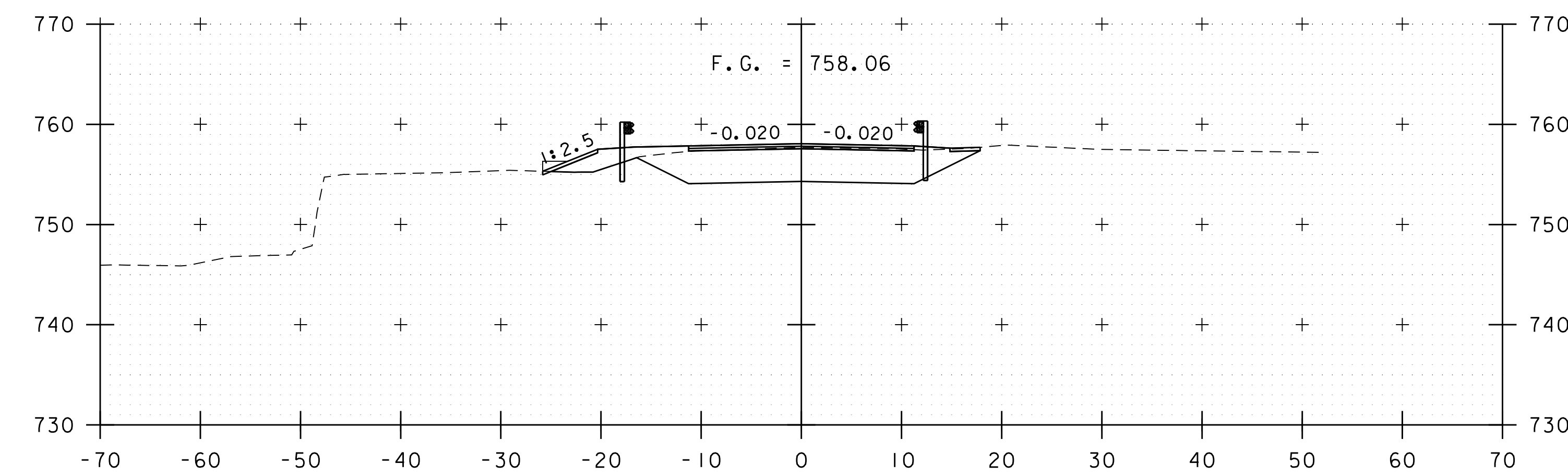
PLOT DATE: 1/6/2021  
DRAWN BY: J.D. KEENER  
CHECKED BY: R.H. BARNES  
SHEET 27 OF 38



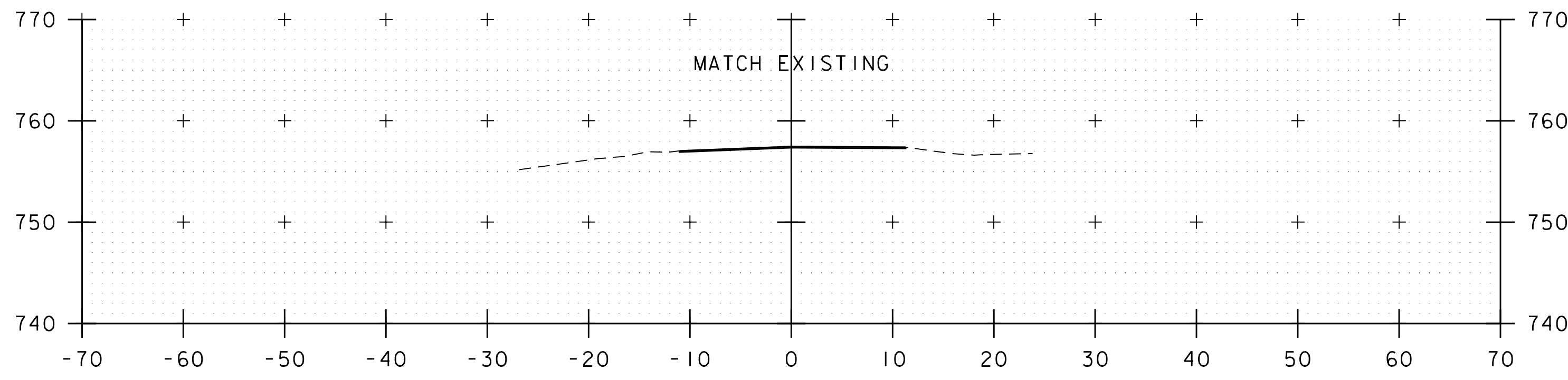
BEGIN BRIDGE  
STA. 13+43.14



12+50

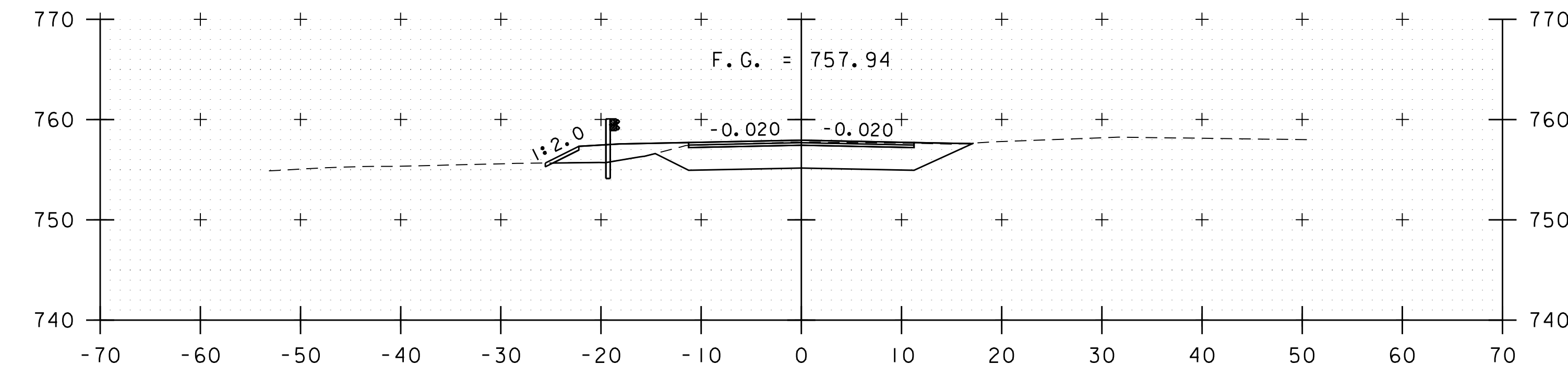


13+25



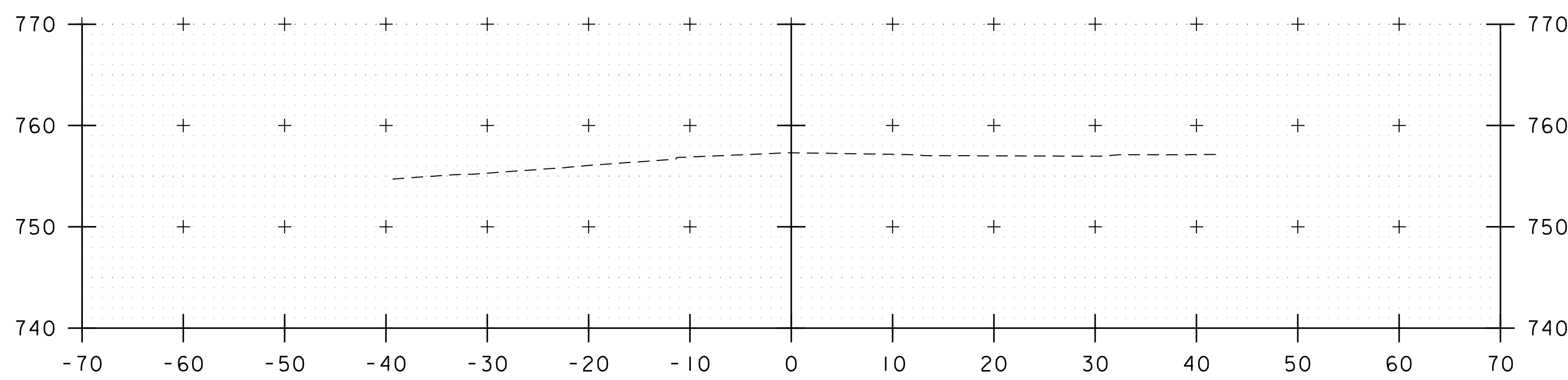
12+25

BEGIN APPROACH  
STA. 12+25.00

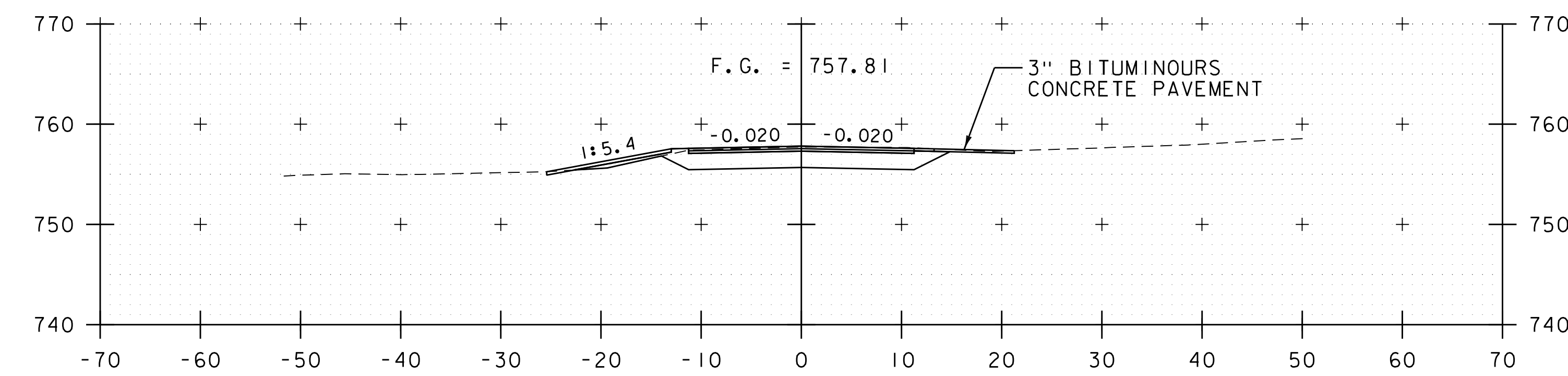


13+00

BEGIN PROJECT  
STA. 12+85.00



12+00



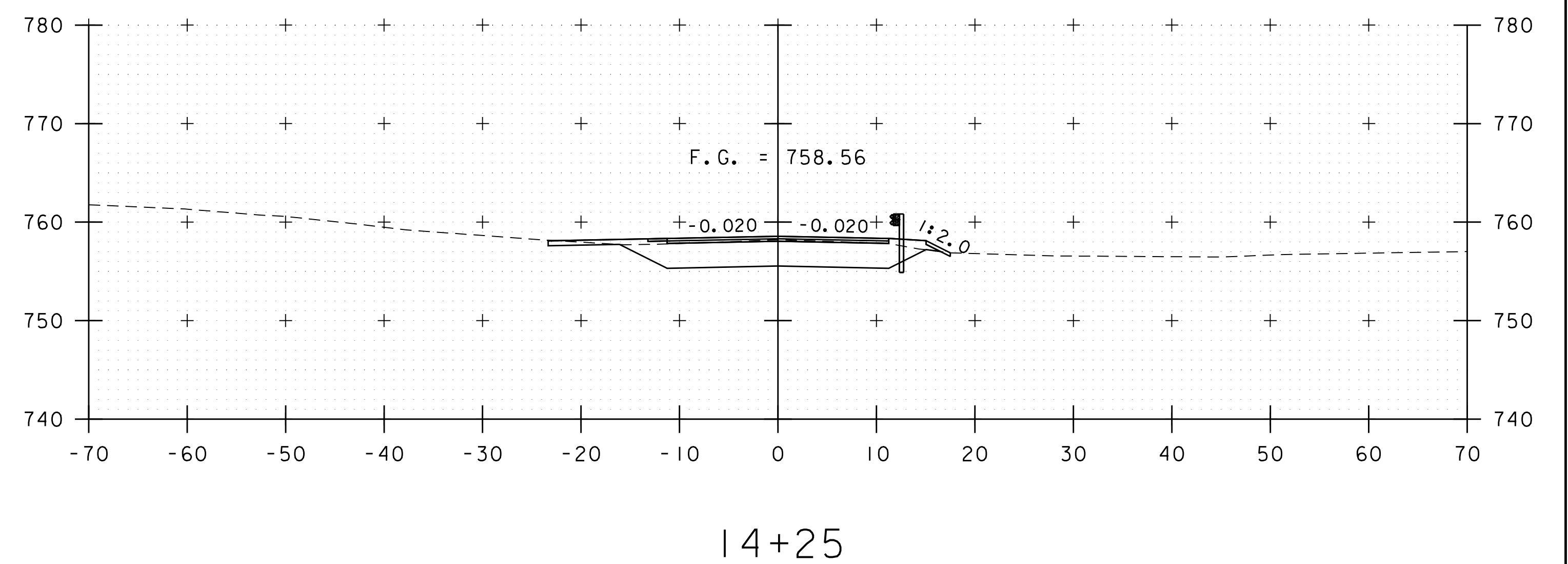
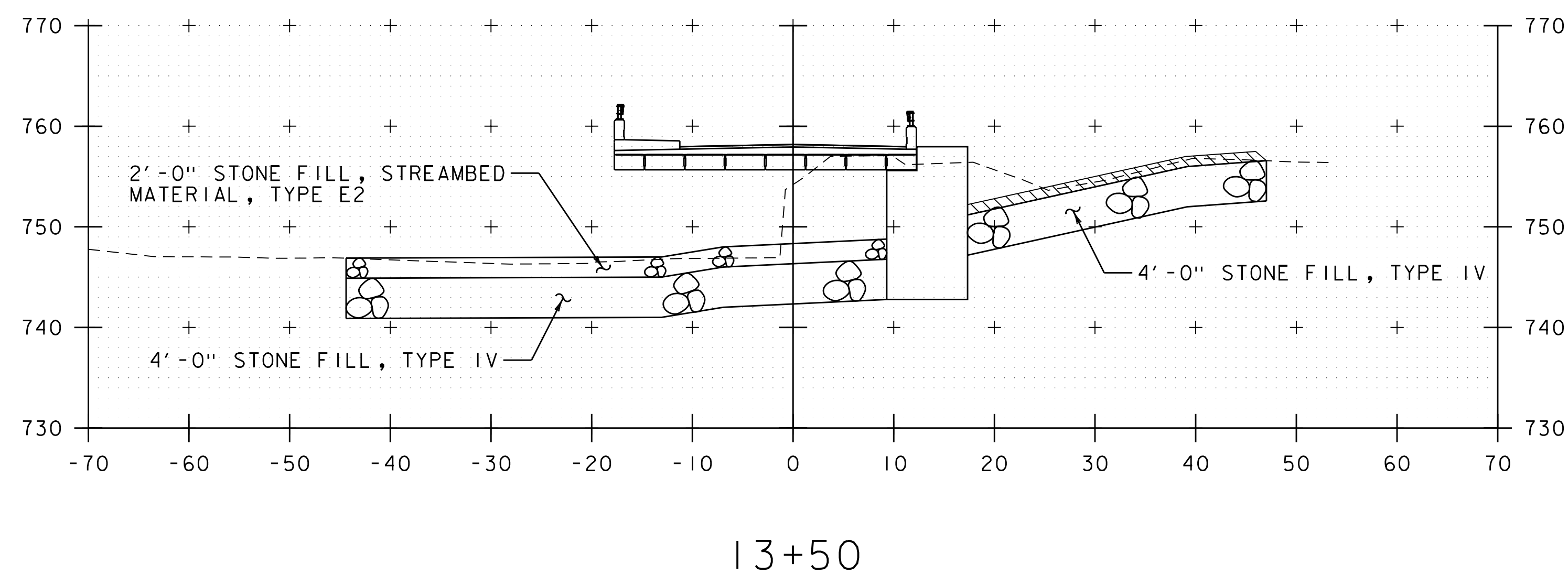
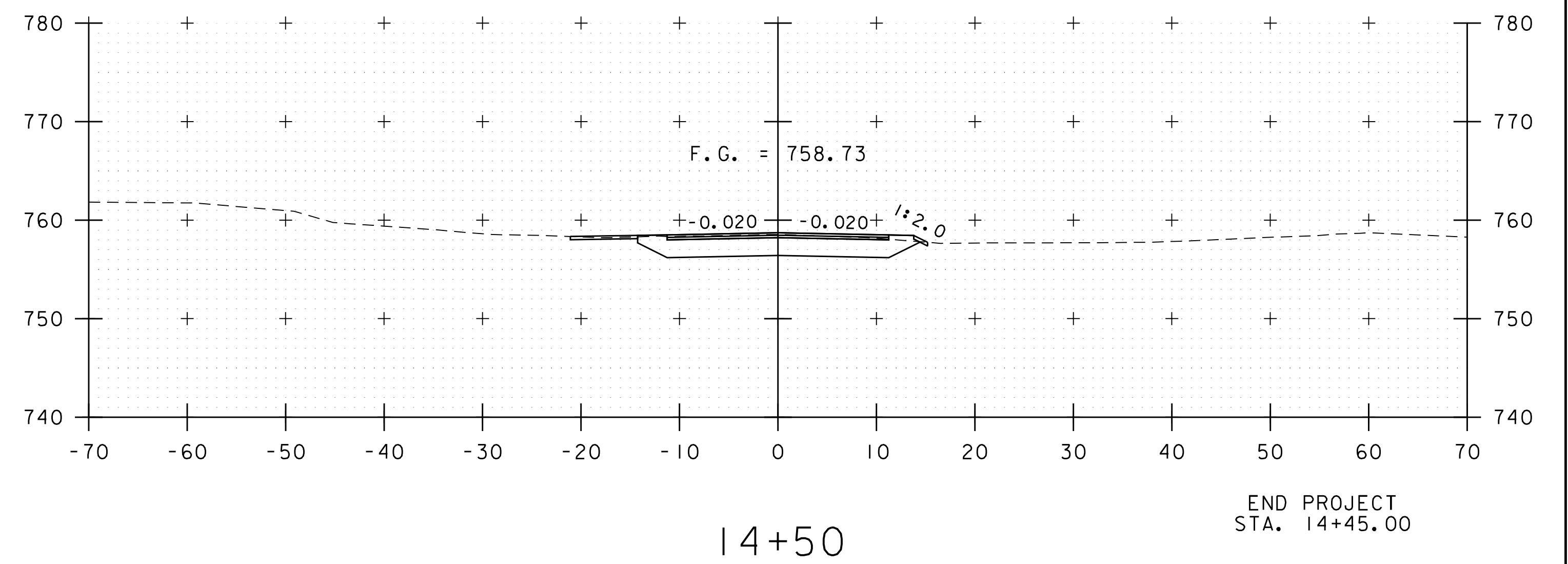
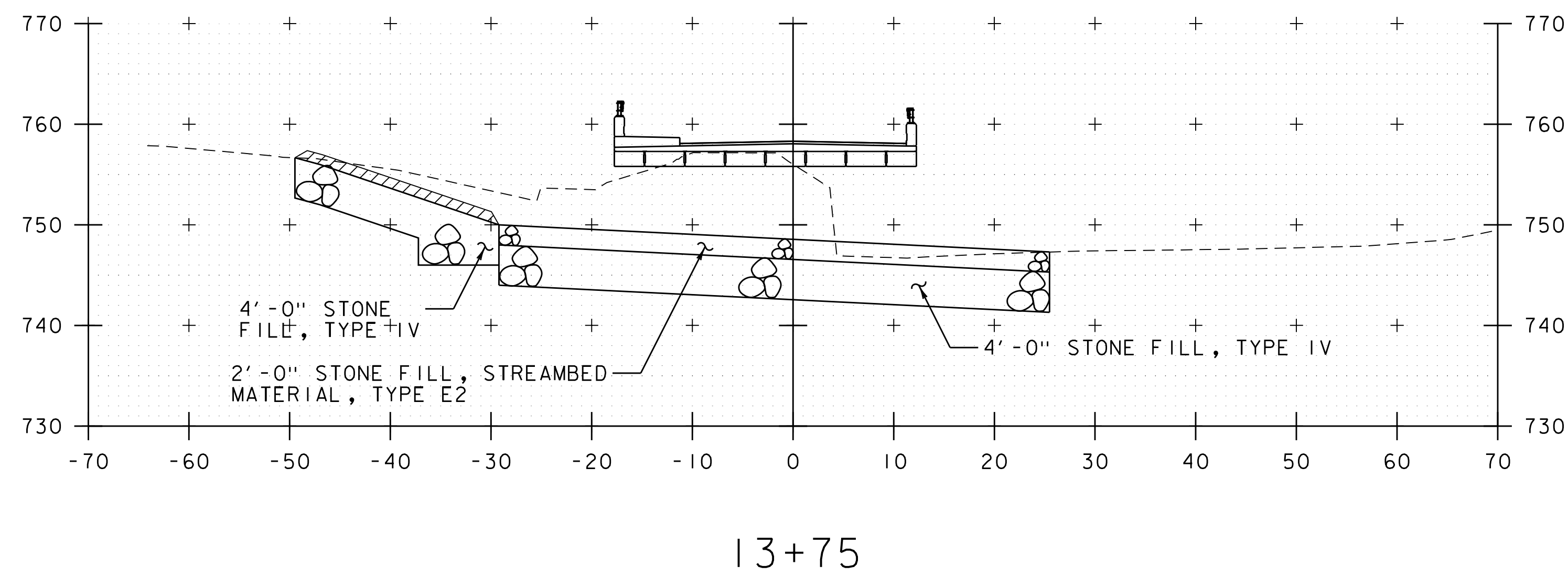
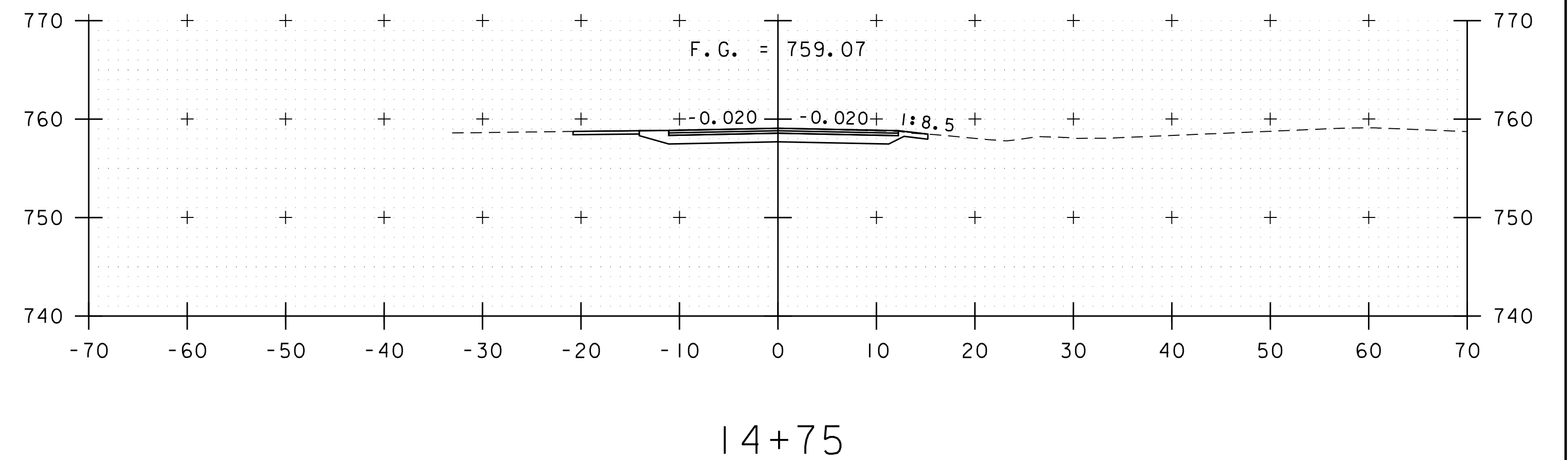
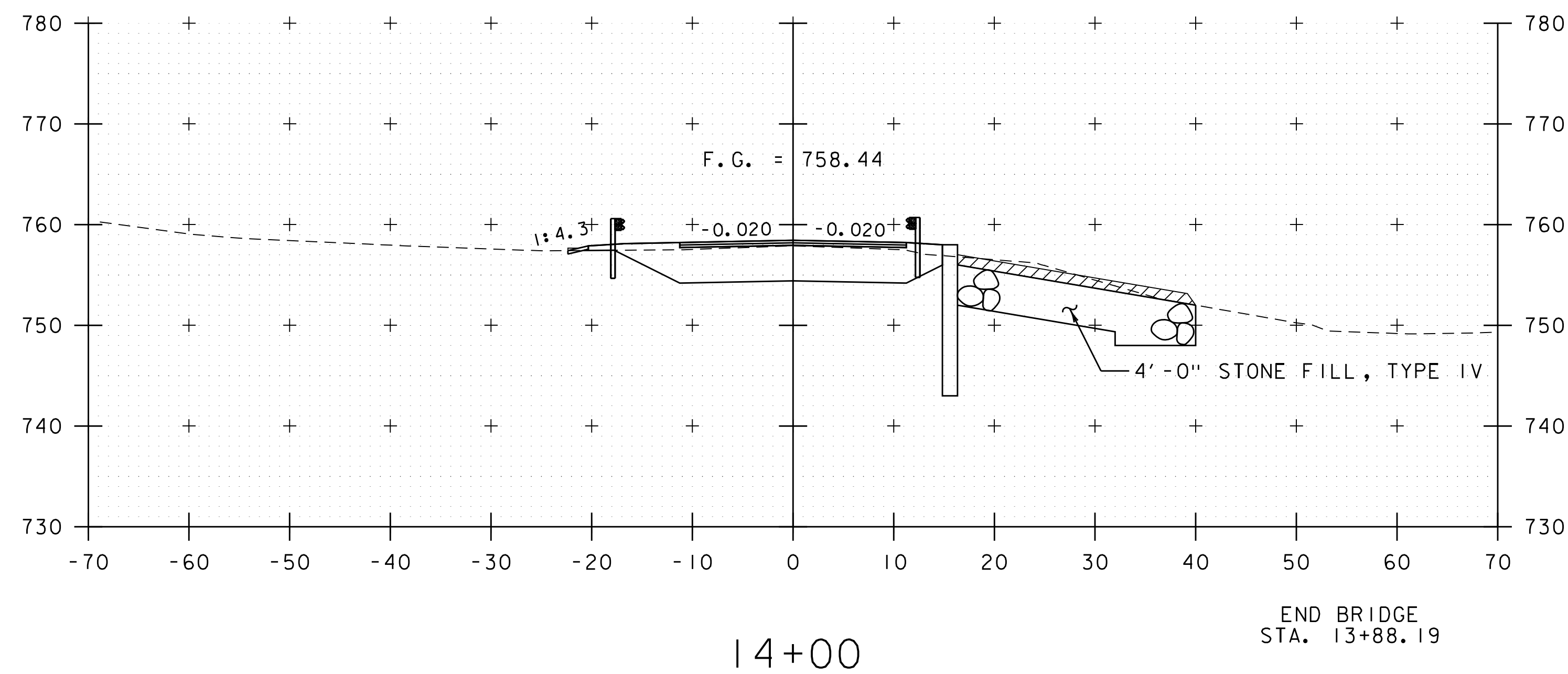
12+75

ROADWAY CROSS SECTIONS

SCALE 1" = 10' - 0"  
STA. 12+00 - 13+25



PROJECT NAME: BROOK ROAD BRIDGE	
PROJECT NUMBER: 58223.00	
FILE NAME: 58223.00_XS.dgn	PLOT DATE: 1/6/2021
PROJECT LEADER: J.D. KEENER	DRAWN BY: J.D. KEENER
DESIGNED BY: J.D. KEENER	CHECKED BY: R.H. BARNES
ROADWAY CROSS SECTIONS (1 OF 3)	SHEET 28 OF 38



ROADWAY CROSS SECTIONS

SCALE 1" = 10'-0"  
STA. 13+50 - 14+75



PROJECT NAME: BROOK ROAD BRIDGE

PROJECT NUMBER: 58223.00

FILE NAME: 58223.00_XS.dgn

PROJECT LEADER: J.D. KEENER

DESIGNED BY: J.D. KEENER

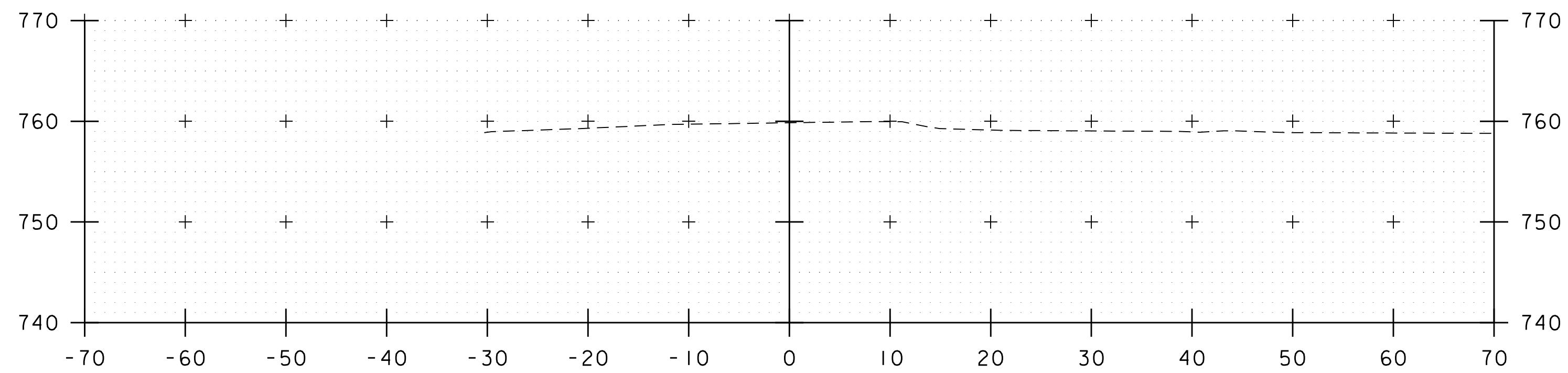
ROADWAY CROSS SECTIONS (2 OF 3)

PLOT DATE: 1/6/2021

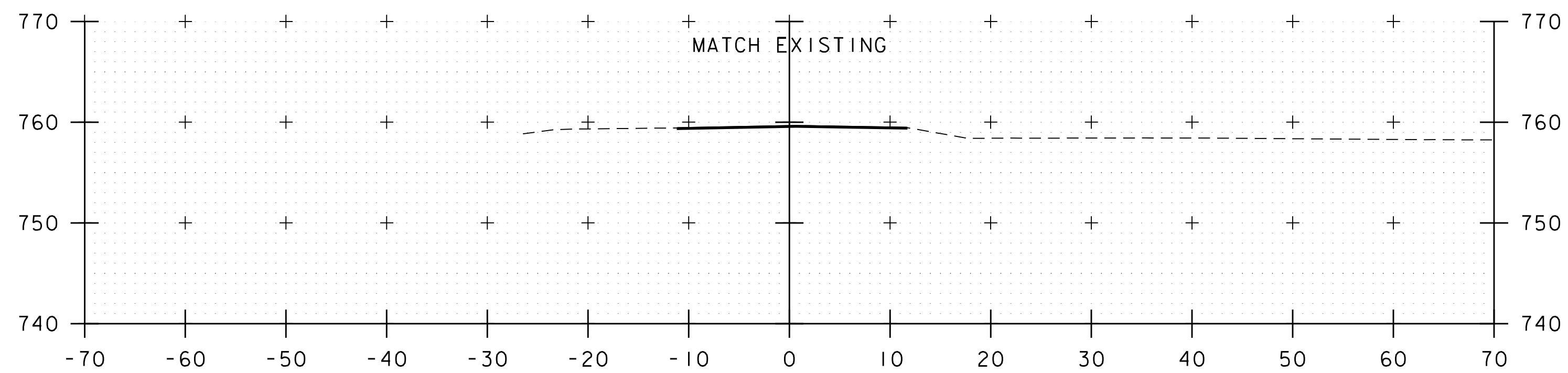
DRAWN BY: J.D. KEENER

CHECKED BY: R.H. BARNES

SHEET 29 OF 38

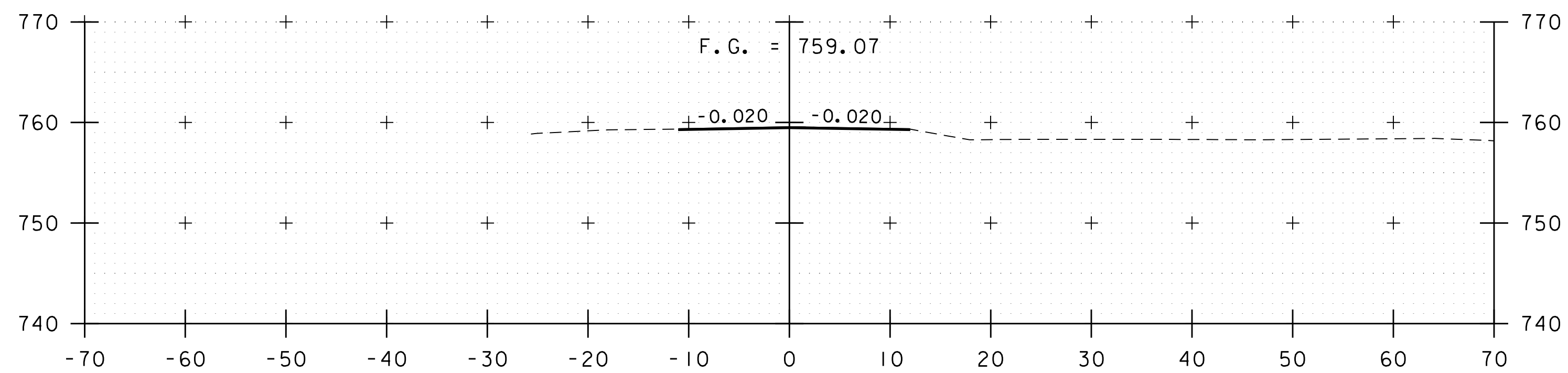


15+25



15+05

END APPROACH  
STA. 15+05.00



15+00

ROADWAY CROSS SECTIONS

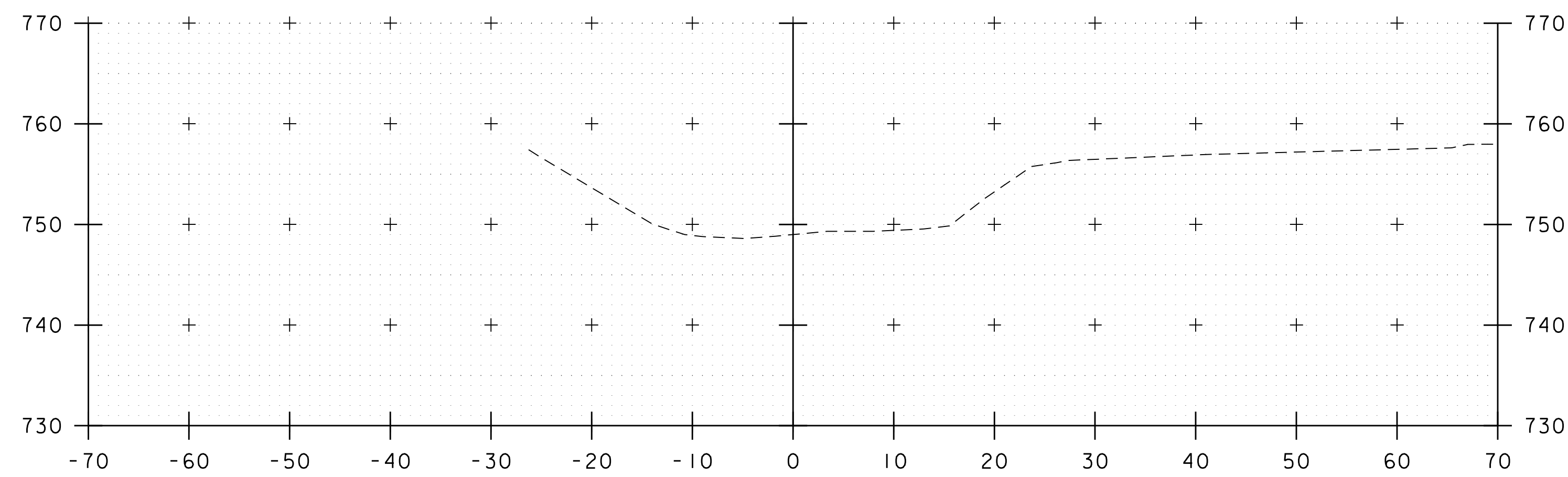
SCALE 1" = 10' - 0"  
STA. 15+00 - 15+25



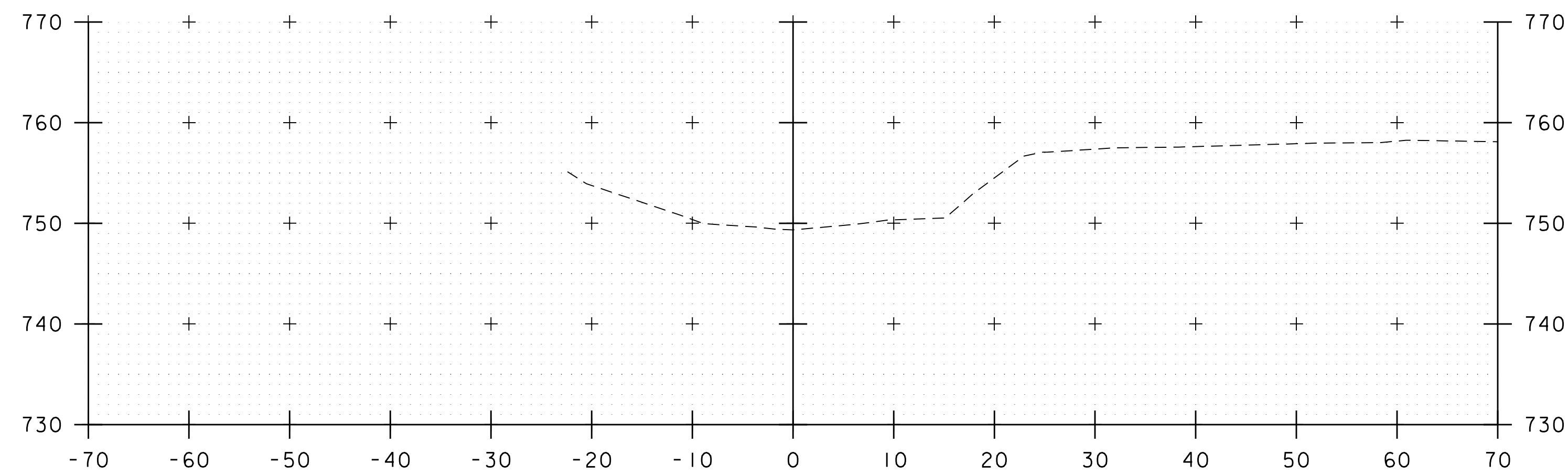
PROJECT NAME: BROOK ROAD BRIDGE  
PROJECT NUMBER: 58223.00

FILE NAME: 58223.00_XS.dgn  
PROJECT LEADER: J.D. KEENER  
DESIGNED BY: J.D. KEENER  
ROADWAY CROSS SECTIONS (3 OF 3)

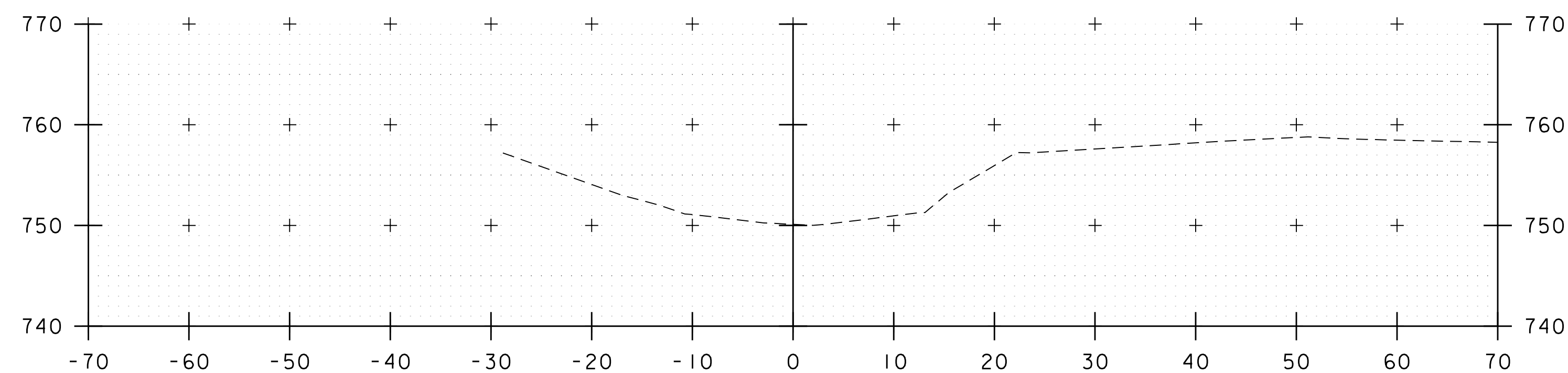
PLOT DATE: 1/6/2021  
DRAWN BY: J.D. KEENER  
CHECKED BY: R.H. BARNES  
SHEET 30 OF 38



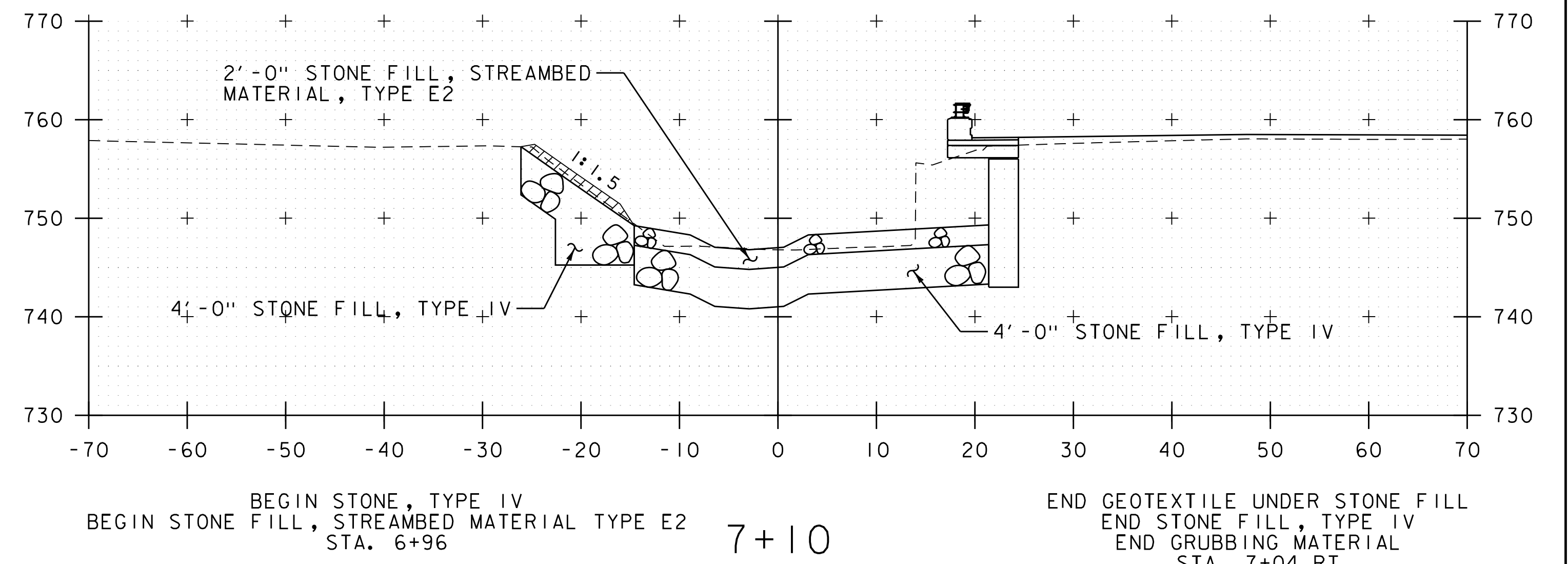
6+50



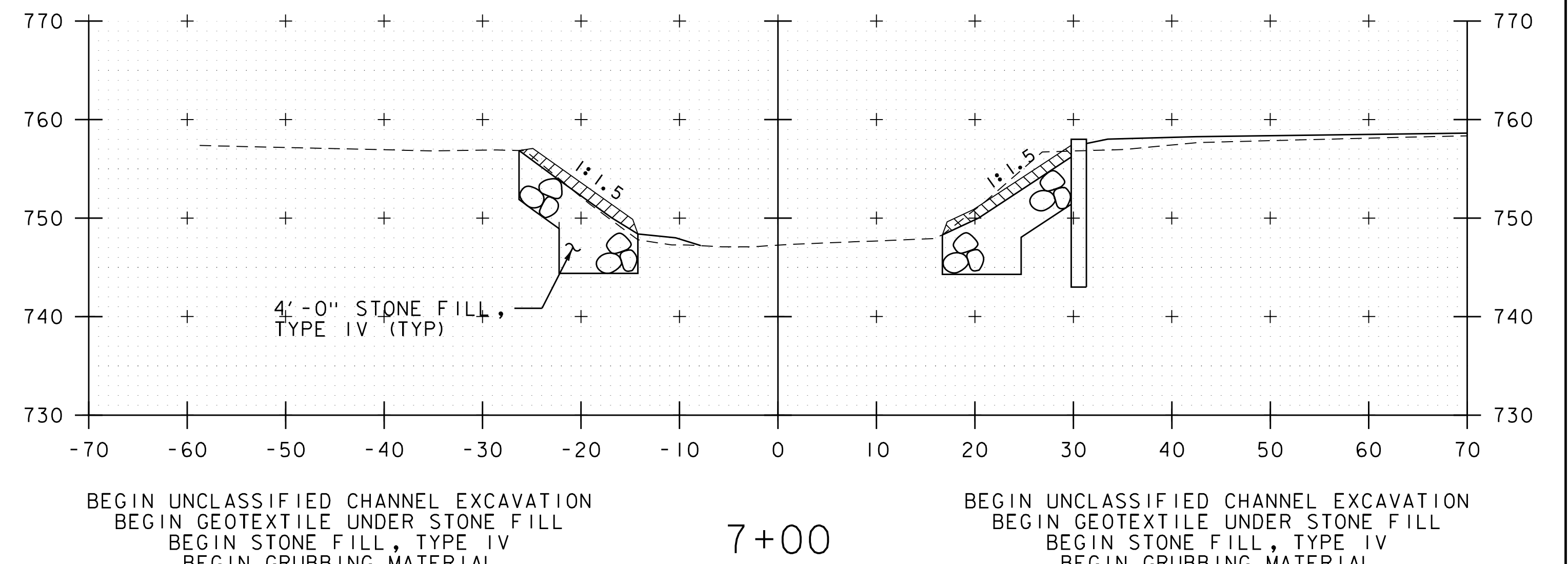
6+25



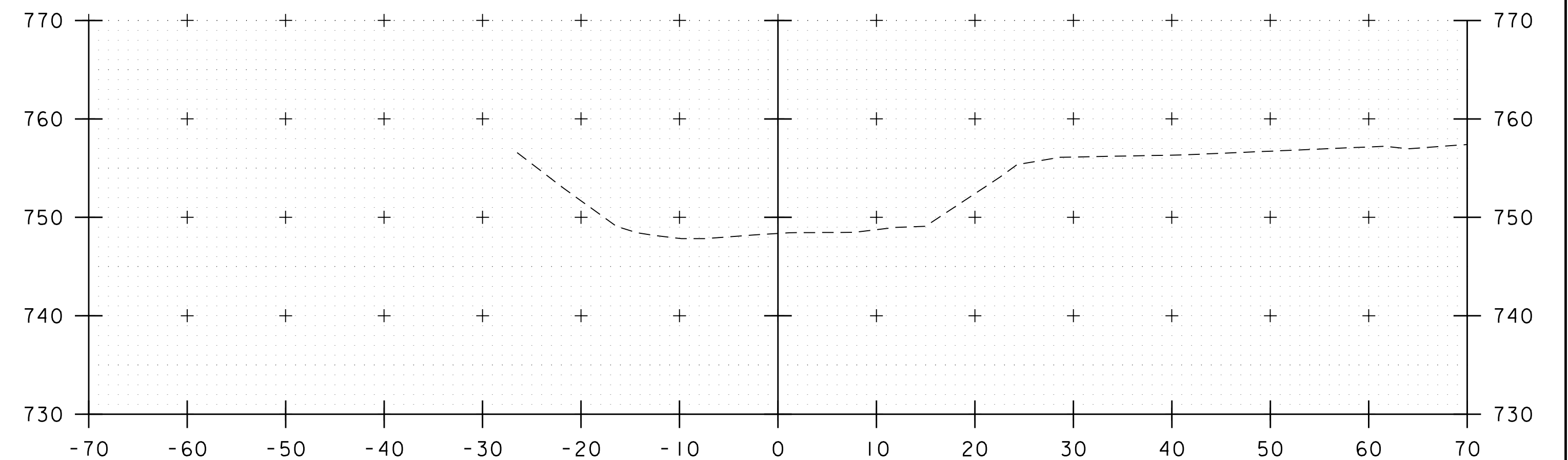
6+00



7+10



7+00



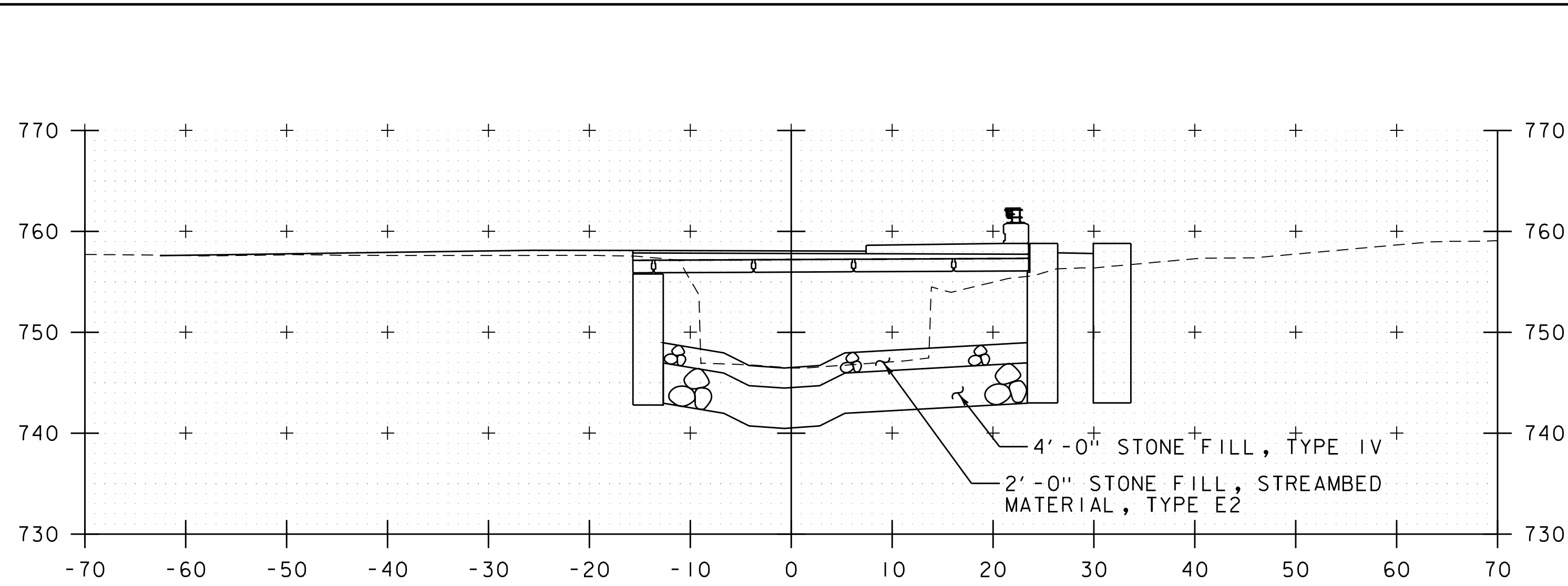
6+75

CHANNEL CROSS SECTIONS

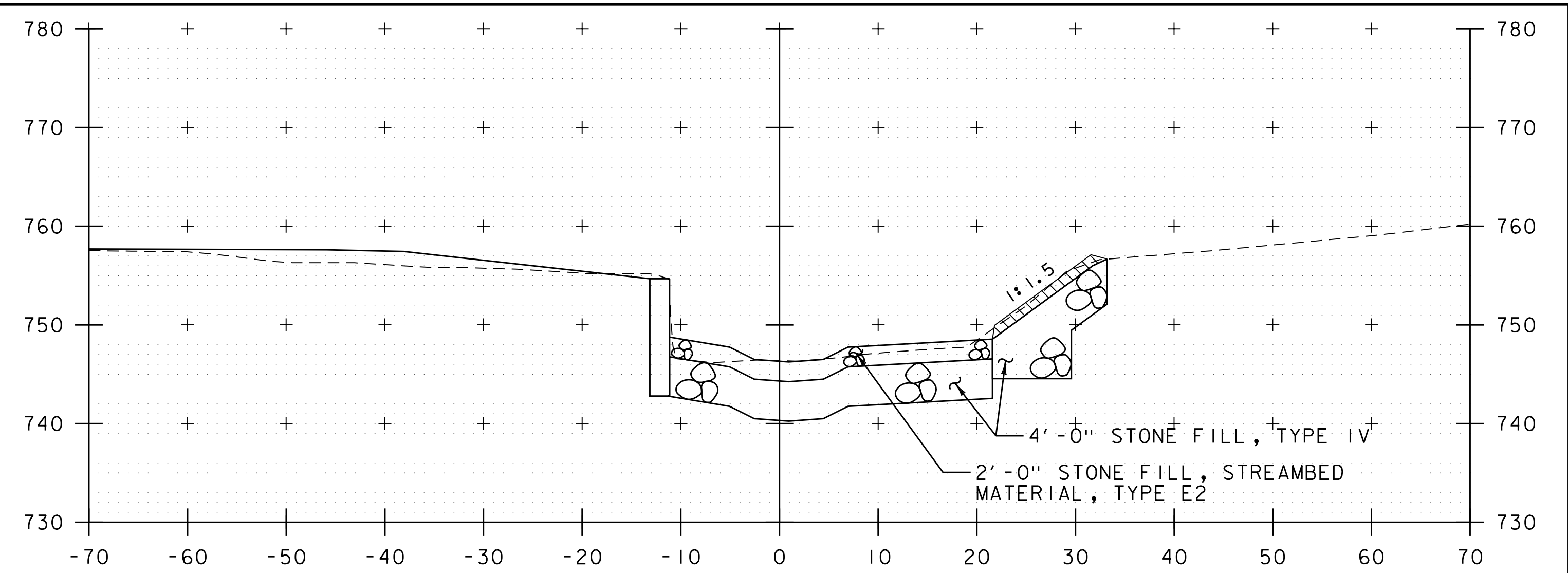
SCALE 1" = 10'-0"  
STA. 6+00 - 7+10



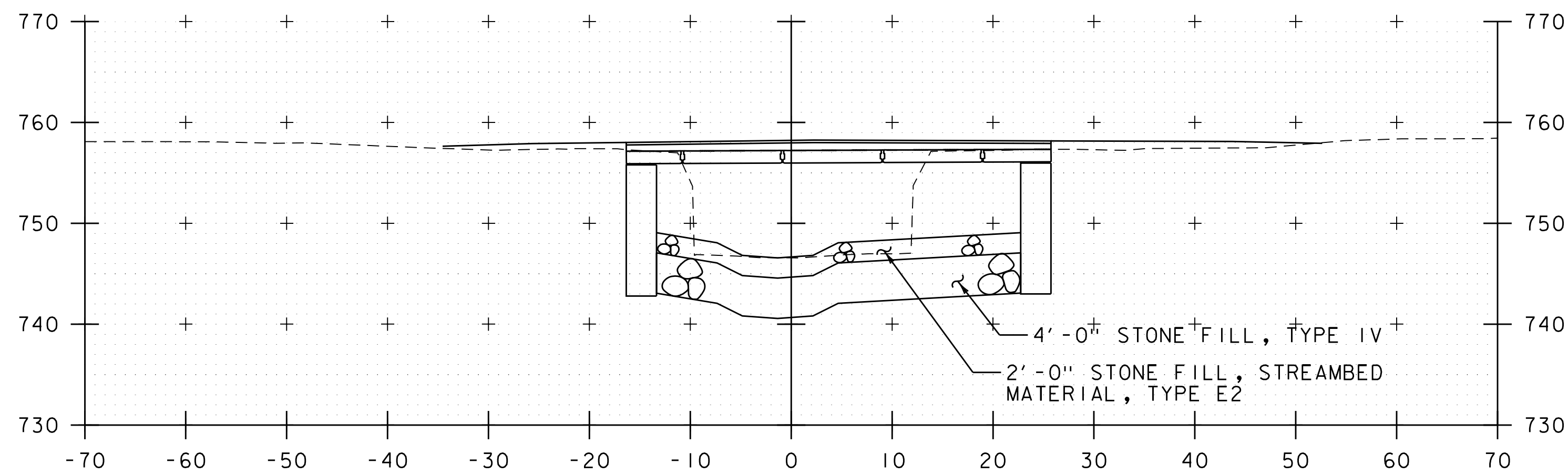
PROJECT NAME: BROOK ROAD BRIDGE	
PROJECT NUMBER: 58223.00	
FILE NAME: 58223.00_XS.dgn	PLOT DATE: 1/6/2021
PROJECT LEADER: J.D. KEENER	DRAWN BY: J.D. KEENER
DESIGNED BY: J.D. KEENER	CHECKED BY: R.H. BARNES
CHANNEL CROSS SECTIONS (1 OF 3)	SHEET 31 OF 38



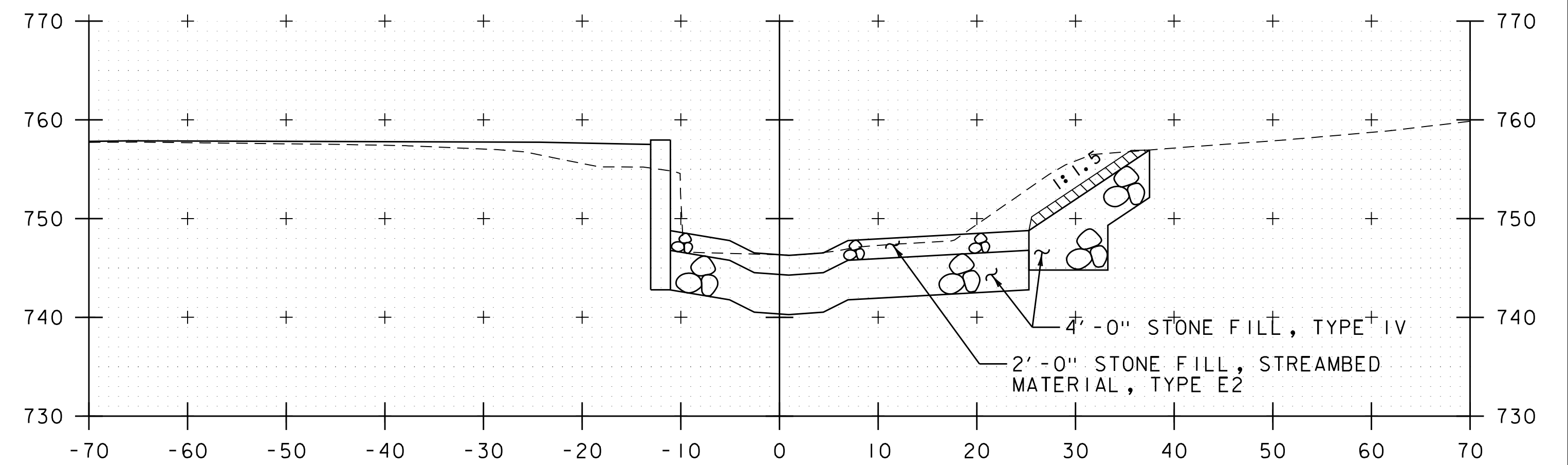
7+40



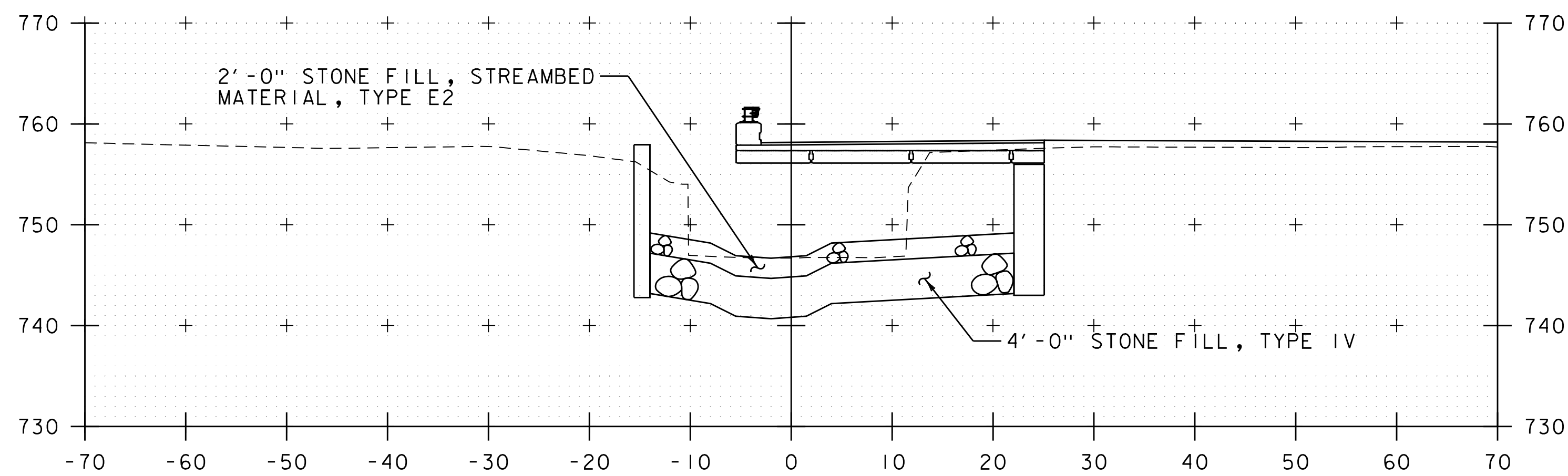
7+70



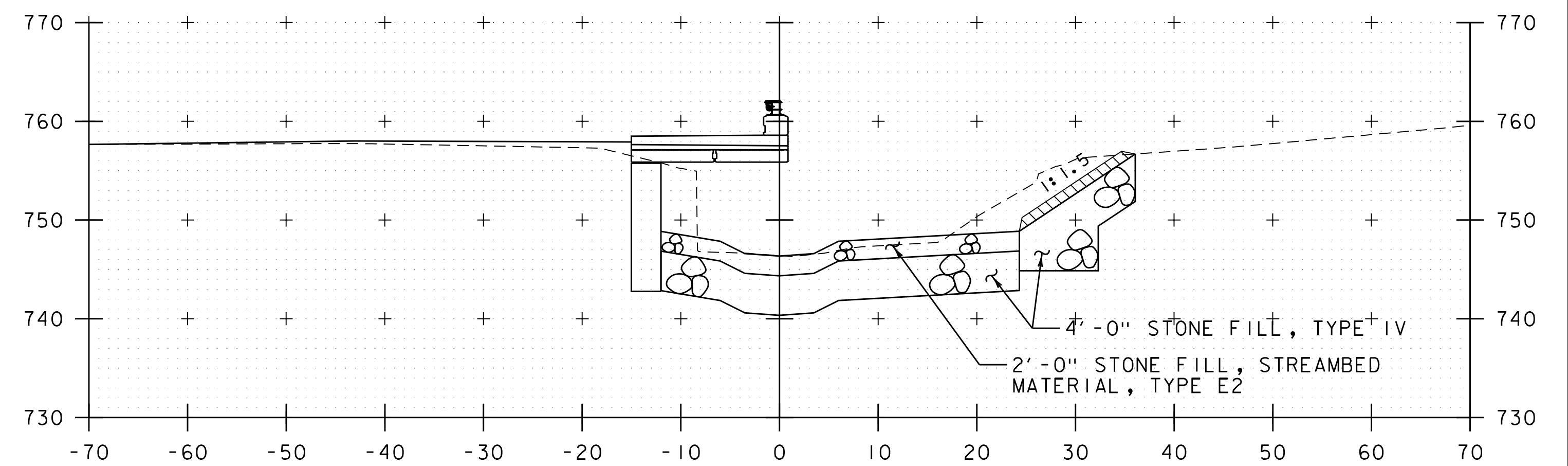
7+30



7+60



7+20



7+50

END GEOTEXTILE UNDER STONE FILL  
END STONE FILL, TYPE IV  
END GRUBBING MATERIAL  
STA. 7+24 RT

BEGIN GEOTEXTILE UNDER STONE FILL  
BEGIN STONE FILL, TYPE IV  
BEGIN GRUBBING MATERIAL  
STA. 7+40 RT

CHANNEL CROSS SECTIONS

SCALE 1" = 10'-0"  
STA. 7+20 - 7+70



PROJECT NAME: BROOK ROAD BRIDGE

PROJECT NUMBER: 58223.00

FILE NAME: 58223.00_XS.dgn

PROJECT LEADER: J.D. KEENER

DESIGNED BY: J.D. KEENER

CHANNEL CROSS SECTIONS (2 OF 3)

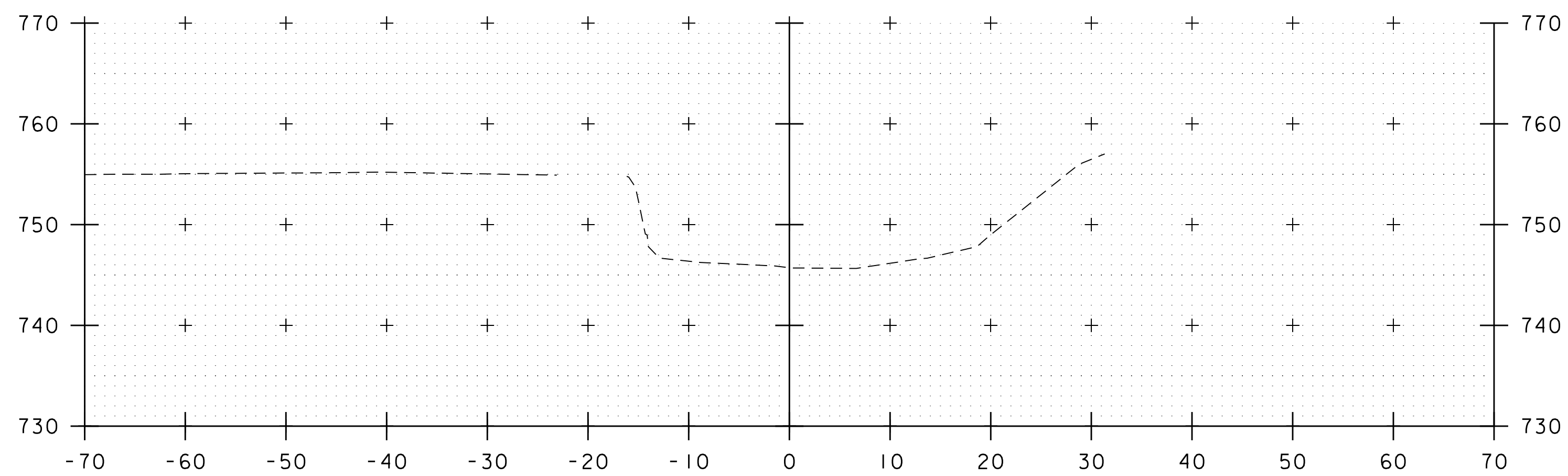
PLOT DATE: 1/6/2021

DRAWN BY: J.D. KEENER

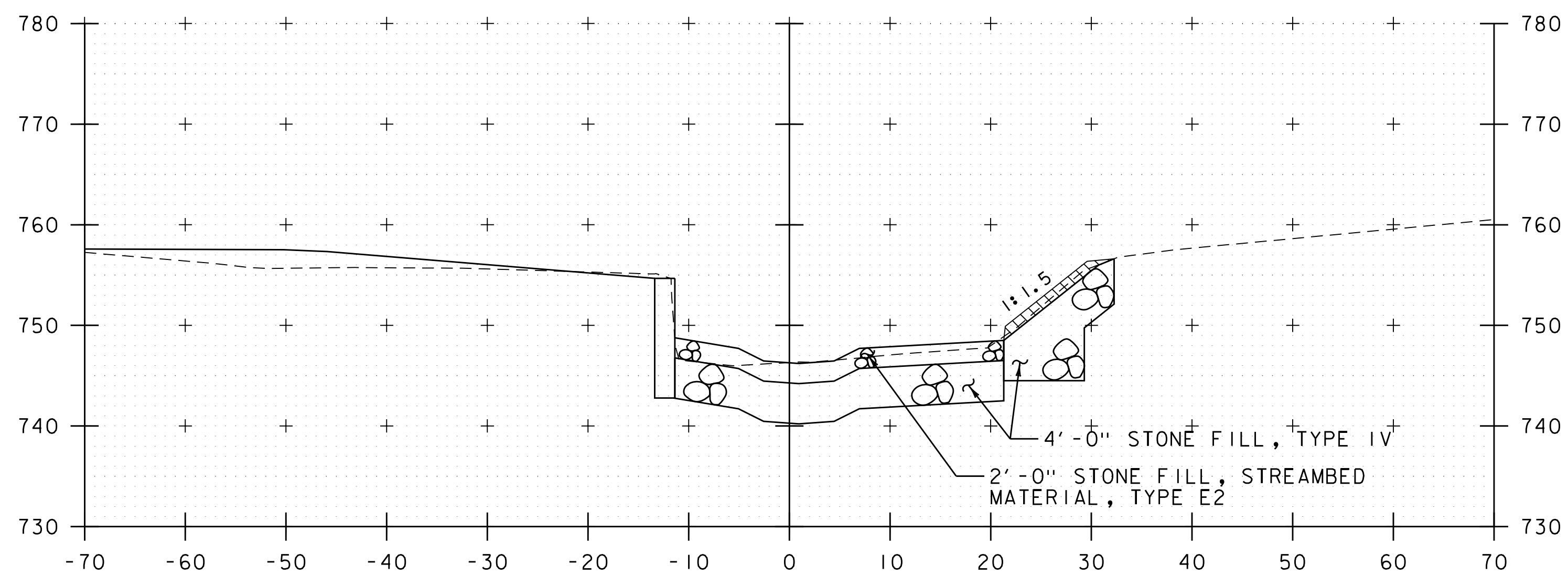
CHECKED BY: R.H. BARNES

SHEET 32 OF 38





8+00



END UNCLASSIFIED CHANNEL EXCAVATION  
 END GEOTEXTILE UNDER STONE FILL  
 END STONE FILL, TYPE IV  
 STA. 7+76 LT

7+75

END UNCLASSIFIED CHANNEL EXCAVATION  
 END GEOTEXTILE UNDER STONE FILL  
 END STONE FILL, TYPE IV  
 END GRUBBING MATERIAL  
 STA. 7+81 RT

CHANNEL CROSS SECTIONS

SCALE 1" = 10'-0"  
 STA. 7+75 - 8+00



PROJECT NAME: BROOK ROAD BRIDGE

PROJECT NUMBER: 58223.00

FILE NAME: 58223.00_XS.dgn

PROJECT LEADER: J.D. KEENER

DESIGNED BY: J.D. KEENER

CHANNEL CROSS SECTIONS (3 OF 3)

PLOT DATE: 1/6/2021

DRAWN BY: J.D. KEENER

CHECKED BY: R.H. BARNES

SHEET 33 OF 38

# EPSC PLAN NARRATIVE

## 1.1 PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE REMOVAL OF BRIDGE 21 IN ITS ENTIRETY INCLUDING ITS ABUTMENT, CONCRETE FLOOR AND WINGWALLS. BRIDGE 21 WILL BE REPLACED WITH A CONCRETE SLAB BRIDGE SPANNING 45 FEET OVER THE SOUTH BRANCH OF THE WILLIAMS RIVER, ON NEW INTEGRAL ABUTMENT CONCRETE SUBSTRUCTURES SUPPORTED BY DRIVEN PILES. BRIDGE 21 IS LOCATED IN THE TOWN OF PLAINFIELD, ON BROOK ROAD, APPROXIMATELY 450 FT EAST OF THE INTERSECTION OF BROOK ROAD (TH-2) AND MILL STREET (TH-1).

NOTE: AREA OF DISTURBANCE INCLUDES LIMITS OF EARTH DISTURBANCE WITHIN THE PROJECT AREA, AS WELL AS WASTE, BORROW AND STAGING AREAS, AND OTHER EARTH DISTURBING ACTIVITIES WITHIN OR DIRECTLY ADJACENT TO THE PROJECT LIMITS AS SHOWN ON THE ATTACHED EPSC PLAN.

TOTAL AREA OF DISTURBANCE AS SHOWN ON THE ATTACHED EPSC PLAN IS APPROXIMATELY 0.65 ACRES.

IT IS ANTICIPATED THAT THIS PROJECT WILL LAST ONE CONSTRUCTION SEASON.

## 1.2 SITE INVENTORY

### 1.2.1 TOPOGRAPHY

THE TOPOGRAPHY OF THE AREA IS A RELATIVELY FLAT VALLEY FLOOR AND IS WELL-POPULATED WITH RESIDENCES ALONG SIDE THE GREAT BROOK AND OCCASIONAL WOODED AND OPEN AREAS. BROOK ROAD IS A PAVED ROADWAY WITHIN THE PROJECT SITE AND BOTH CREAMERY AND MILL STREETS, ALSO PAVED ROADWAYS, ARE JUST OUTSIDE THE PROJECT LIMITS. THERE ARE RESIDENCES JUST OUTSIDE THE PROJECT LIMITS ON ALL SIDES OF THE PROJECT, WITH GRASS AND TREE BUFFERS.

### 1.2.2 DRAINAGE, WATERWAYS, BODIES OF WATER, AND PROXIMITY TO NATURAL OR MAN-MADE WATER FEATURES

THE GREAT BROOK IS THE ONLY WATER SOURCE ON THE PROJECT SITE. THE BROOK GENERALLY FLOWS THROUGH A NARROW VALLEY WITH STEEP WALLS WITH MASS FAILURES. THE STEEPNESS OF THE BROOK ALONG WITH THESE CONDITIONS CREATE A CHANNEL THAT HAS A HIGH SEDIMENT BEDLOAD AND WOODY DEBRIS MOVEMENT DURING FLOODING. THE TRIBUTARY AREA AT THE BRIDGE IS APPROXIMATELY 14 SQUARE MILES. THERE ARE NO KNOWN CULVERTS OR DROP INLETS ON SITE DRAINING FROM THE ROADWAY TO THE BROOK. DUE TO THE NATURE OF THE SURROUNDING TERRAIN THE PROJECT SITE COULD RECEIVE RUNOFF WATER FROM A FEW NEARBY SLOPES.

### 1.2.3 VEGETATION

THE VEGETATION IN THE PROJECT AREA CONSISTS OF HARDWOOD TREES AND MIXED RIVER COBBLE COMMUNITIES. THE IMPACT TO VEGETATION WILL BE LIMITED TO THAT WHICH IS DIRECTLY AFFECTED BY REPLACEMENT OF THE EXISTING BRIDGE. UPON PROJECT COMPLETION, THE CHANNEL WILL BE REBUILT USING STREAMBED STONE TYPE E2 AND SIDE SLOPES WILL BE ARMORED WITH STONE FILL TYPE IV AS SPECIFIED ON THE PLANS. DISTURBED VEGETATION WILL BE REESTABLISHED WITH STANDARD SEED AND MULCH PRACTICES.

### 1.2.4 SOILS

ALL SOIL DATA CAME FROM THE U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE FOR THE COUNTY OF WASHINGTON, VERMONT. SOILS ON THE PROJECT SITE ARE SUNDAY FINE SAND, "K FACTOR" = 0.05 ASSUMED BASED ON SURROUNDING SOILS, SOIL HYDROLOGY, AND GRAIN SIZE. THE SOIL IS CONSIDERED LOW EROSION POTENTIAL.

NOTE: K-VALUES GENERALLY INDICATE THE FOLLOWING:

0.0-0.23 = LOW EROSION POTENTIAL  
0.24-0.36 = MODERATE EROSION POTENTIAL  
0.37 AND HIGHER = HIGH EROSION POTENTIAL

### 1.2.5 SENSITIVE RESOURCE AREAS

CRITICAL HABITATS: NO  
HISTORICAL OR ARCHEOLOGICAL AREAS: NO  
PRIME AGRICULTURAL LAND: NO  
THREATENED AND ENDANGERED SPECIES: SUBJECT TO NLEB REVIEW  
WATER RESOURCE: GREAT BROOK  
WETLANDS: NO

## 1.3 RISK EVALUATION

THIS PROJECT DOES NOT FALL UNDER THE JURISDICTION OF GENERAL PERMIT 3-9020 FOR STORMWATER RUNOFF FROM CONSTRUCTION SITES. SHOULD CHANGES PRIOR TO OR DURING CONSTRUCTION RESULT IN ONE OR MORE ACRES OF EARTH DISTURBANCE OR SHOULD THE PROJECT BECOME PART OF A LARGER PLAN OF DEVELOPMENT, THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY ADDITIONAL PERMITTING.

## 1.4 EROSION PREVENTION AND SEDIMENT CONTROL

THE EROSION CONTROL PLANS ARE MEANT AS A GUIDELINE FOR PREVENTING EROSION AND CONTROLLING SEDIMENT TRANSPORT. THE PRINCIPLES OUTLINED IN THIS NARRATIVE CONSIST OF APPLYING MEASURES THROUGHOUT CONSTRUCTION OF THE PROJECT IN ORDER TO MINIMIZE SEDIMENT TRANSPORT TO THE RECEIVING WATERS. THE MEASURES INCLUDE STABILIZATION AND STRUCTURAL PRACTICES, STORM WATER CONTROLS AND OTHER POLLUTION PREVENTION PRACTICES. THEY HAVE BEEN PROPOSED BY THE DESIGNER AS A BASIS FOR PROTECTING RESOURCES AND WILL NEED TO BE BUILT UPON BASED ON THE SPECIFIC MEANS AND METHODS OF THE CONTRACTOR. REFER TO THE LOW RISK SITE HANDBOOK AND APPROPRIATE DETAIL SHEETS FOR SPECIFIC GUIDANCE AND CONSTRUCTION DETAILING.

ALL MEASURES SHALL BE REGULARLY MAINTAINED AND SHALL BE CHECKED FOR SEDIMENT BUILD-UP. SEDIMENT SHALL BE DISPOSED OF AT AN APPROVED SITE WHERE IT WILL NOT BE SUBJECT TO EROSION.

### 1.4.1 MARK SITE BOUNDARIES

SITE BOUNDARIES AND AREAS CONSTRUCTION EQUIPMENT CAN ACCESS SHALL BE DELINEATED.

PROJECT DEMARCATION FENCING (PDF) SHALL BE USED TO PHYSICALLY MARK SITE BOUNDARIES.

### 1.4.2 LIMIT DISTURBANCE AREA

PREVENTING INITIAL SOIL EROSION BY MINIMIZING THE EXPOSED AREA IS MUCH MORE EFFECTIVE THAN TREATING ERODED SEDIMENT. EARTH DISTURBANCE CAN BE MINIMIZED THROUGH CONSTRUCTION PHASING BY ONLY OPENING UP EARTH AS NECESSARY. THIS CAN LIMIT THE AREA THAT WILL BE DISTURBED AND EXPOSED TO EROSION. EMPLOY TEMPORARY CONSTRUCTION STABILIZATION PRACTICES IN INCREMENTAL STAGES AS PHASES CHANGE. FOR PROJECTS WHICH FALL UNDER THE CONSTRUCTION GENERAL PERMIT, ONLY THE ACREAGE LISTED ON THE PERMIT AUTHORIZATION MAY BE EXPOSED AT ANY GIVEN TIME.

MAINTAINING VEGETATED BUFFERS ALONG STREAM BANKS, WETLANDS OR OTHER SENSITIVE AREAS IS A CRUCIAL EROSION AND SEDIMENT CONTROL MEASURE THAT SHOULD BE ESTABLISHED WHEREVER POSSIBLE.

### 1.4.3 SITE ENTRANCE/EXIT STABILIZATION

TRACKING OF SEDIMENT ONTO PUBLIC HIGHWAYS SHALL BE MINIMIZED TO REDUCE THE POTENTIAL FOR RUNOFF ENTERING RECEIVING WATERS. INSTALLATION SHALL COINCIDE WITH THE CONTRACTORS PROGRESS SCHEDULE.

STABILIZED CONSTRUCTION ENTRANCES ARE ANTICIPATED FOR THIS PROJECT.

### 1.4.4 INSTALL SEDIMENT BARRIERS

SEDIMENT BARRIERS SHALL BE UTILIZED TO INTERCEPT RUNOFF AND ALLOW SUSPENDED SEDIMENT TO SETTLE OUT. THEY SHALL BE INSTALLED PRIOR TO ANY UP SLOPE WORK.

SILT FENCE, TYPE II WILL BE INSTALLED AS PROPOSED ON THE EPSC PLAN.

### 1.4.5 DIVERT UPLAND RUNOFF

DIVERSIONARY MEASURES SHALL BE USED TO INTERCEPT RUNOFF FROM ABOVE THE CONSTRUCTION AND DIRECT IT AROUND THE DISTURBED AREA SO THAT CLEAN WATER DOES NOT BECOME MUDDIED WHILE TRAVELING OVER EXPOSED SOILS ON THE CONSTRUCTION SITE.

THE PROJECT AREA IS RELATIVELY FLAT WITH WETLANDS EXISTING DIRECTLY UPLAND OF THE PROJECT AREA. THEREFORE, IT IS NOT ANTICIPATED THAT DIVERSION MEASURES WILL BE NECESSARY.

### 1.4.6 SLOW DOWN CHANNELIZED RUNOFF

CHECK STRUCTURES SHALL BE UTILIZED TO REDUCE THE VELOCITY, AND THUS THE EROSION POTENTIAL, OF CONCENTRATED FLOW IN CHANNELS.

STONE CHECK DAMS ARE NOT ANTICIPATED FOR THIS PROJECT.

### 1.4.7 CONSTRUCT PERMANENT CONTROLS

PERMANENT EROSION CONTROL STRUCTURES ARE NOT ANTICIPATED FOR THIS PROJECT.

### 1.4.8 STABILIZE EXPOSED SOILS DURING CONSTRUCTION

ALL AREAS OF DISTURBANCE MUST HAVE TEMPORARY STABILIZATION IN PLACE WITHIN 48 HOURS OF DISTURBANCE OR IN ACCORDANCE WITH THE CONSTRUCTION GENERAL PERMIT 3-9020 AUTHORIZATION.

SURFACE ROUGHENING OF ALL EXPOSED SLOPES, COMBINED WITH TEMPORARY MULCHING, SHALL BE UTILIZED ON A REGULAR BASIS. BIODEGRADABLE EROSION CONTROL MATTING OR AN EQUIVALENT SHALL BE USED TO STABILIZE ALL SLOPES STEEPER THAN 1:3.

THE FORECAST OF RAINFALL EVENTS SHALL TRIGGER IMMEDIATE PROTECTION OF EXPOSED SOILS.

### 1.4.9 WINTER STABILIZATION

VARIOUS MEASURES SPECIFIC TO WINTER MAY BE NECESSARY SHOULD THE PROJECT EXTEND INTO WINTER (OCTOBER 15 THROUGH APRIL 15). REFER TO THE LOW RISK SITE HANDBOOK FOR GUIDANCE.

### 1.4.10 STABILIZE SOIL AT FINAL GRADE

EXPOSED SOIL MUST BE STABILIZED WITHIN 48 HOURS OF REACHING FINAL GRADE.

SEED, MULCH, FERTILIZER AND LIME SHALL BE USED TO ESTABLISH PERMANENT VEGETATION. FOR SLOPES STEEPER THAN 1:3, BIODEGRADABLE EROSION CONTROL MATTING OR AN EQUIVALENT SHALL BE USED INSTEAD OF MULCH.

### 1.4.11 DE-WATERING ACTIVITIES

DISCHARGE FROM DEWATERING ACTIVITIES THAT FLOWS OFF OF THE CONSTRUCTION SITE MUST NOT CAUSE OR CONTRIBUTE TO A VIOLATION OF THE VERMONT WATER QUALITY STANDARDS.

TREATMENT OF DEWATERING ACTIVITIES IS ANTICIPATED. FILTER BAGS FOR THE TREATMENT HAVE BEEN PROPOSED AND ARE SHOWN ON THE PLANS.

### 1.4.12 INSPECT YOUR SITE

INSPECT THE PROJECT SITE BASED ON SPECIAL PROVISION REQUIREMENTS OR CONSTRUCTION GENERAL PERMIT AUTHORIZATION STIPULATIONS.

## 1.5 SEQUENCE AND STAGING

THIS SECTION WILL BE DEVELOPED BY THE CONTRACTOR USING THE GUIDANCE OUTLINED IN THE VTRANS EPSC PLAN CONTRACTOR CHECKLIST.

### 1.5.1 CONSTRUCTION SEQUENCE

### 1.5.2 OFF-SITE ACTIVITIES

IN ADDITION TO THE CONTRACTOR CHECKLIST ANY ACTIVITIES OUTSIDE THE CONSTRUCTION LIMITS SHALL FOLLOW SPECIFICATION 105.25- 105.29 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION.

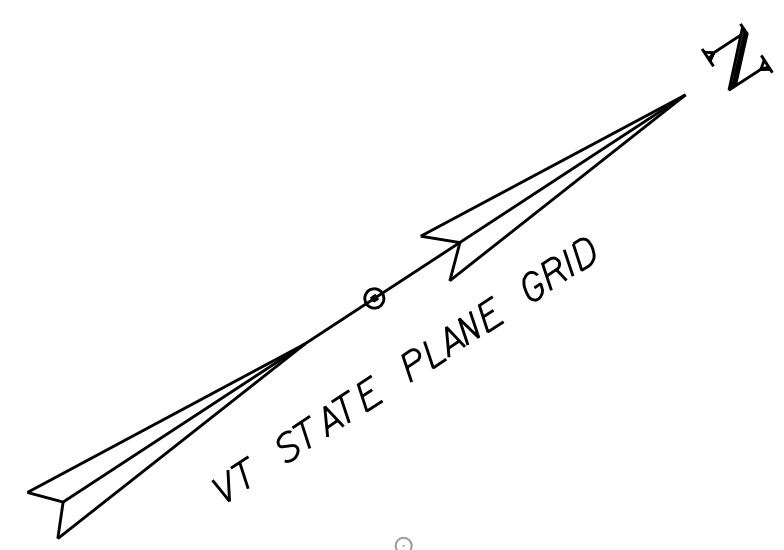
### 1.5.3 UPDATES

PROJECT NAME: BROOK ROAD BRIDGE

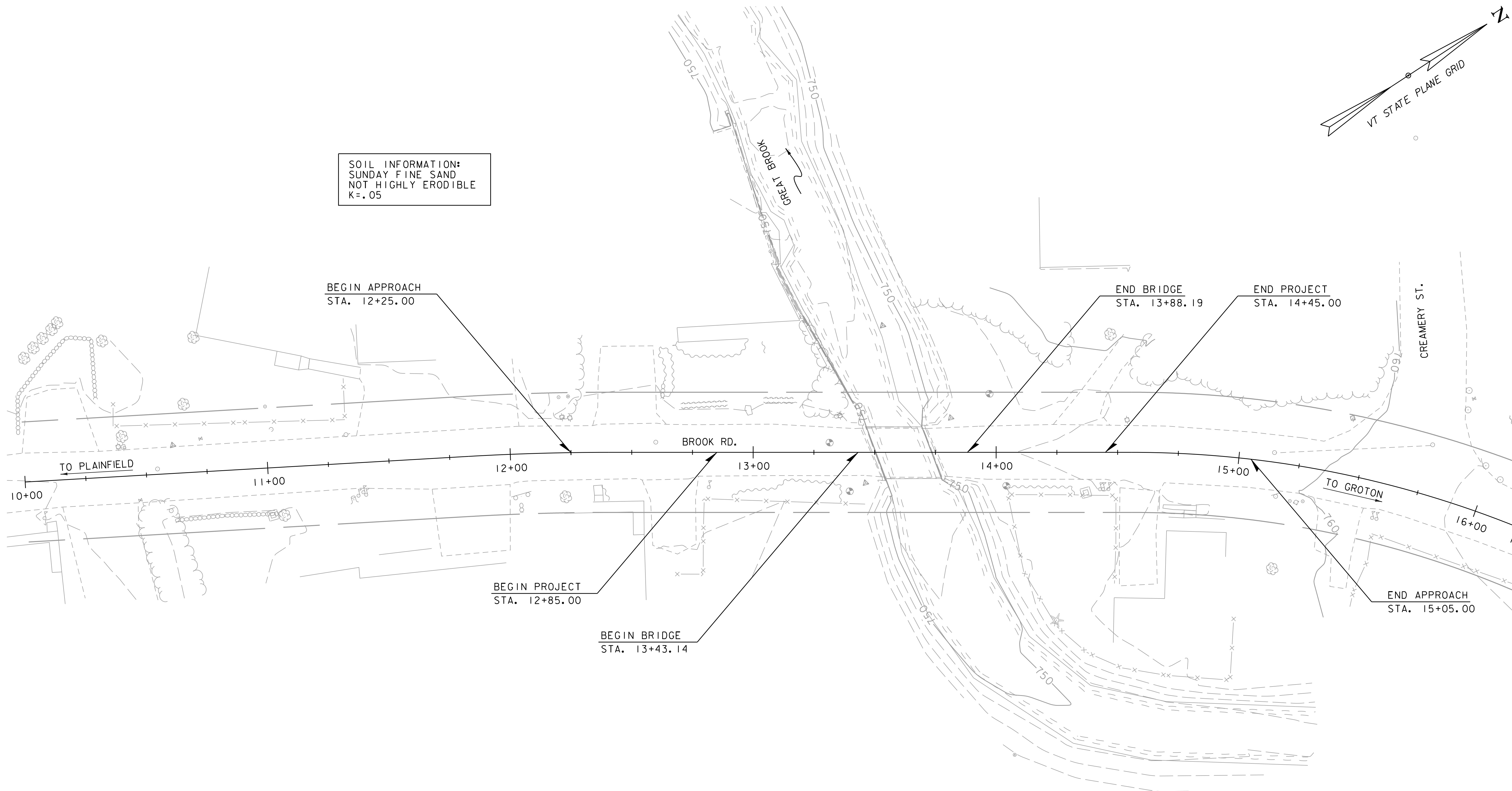
PROJECT NUMBER: 58223

FILE NAME: 58223.00_EPSC-Narrative.dgn PLOT DATE: 1/6/2021  
PROJECT LEADER: J.D. KEENER DRAWN BY: N.A. TRUSLOW  
DESIGNED BY: J.D. KEENER CHECKED BY: R.H. BARNES  
EPSC NARRATIVE SHEET 34 OF 38





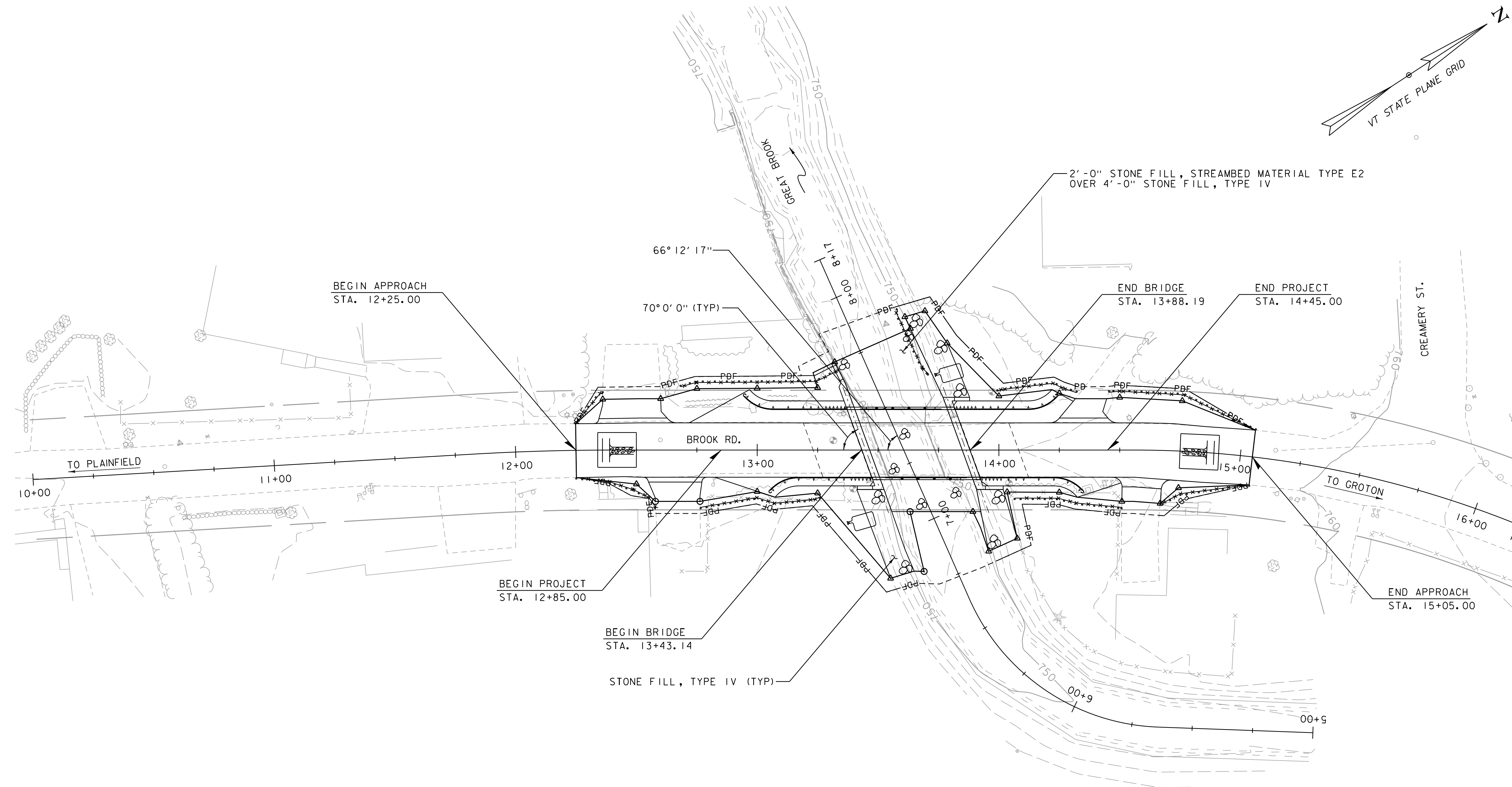
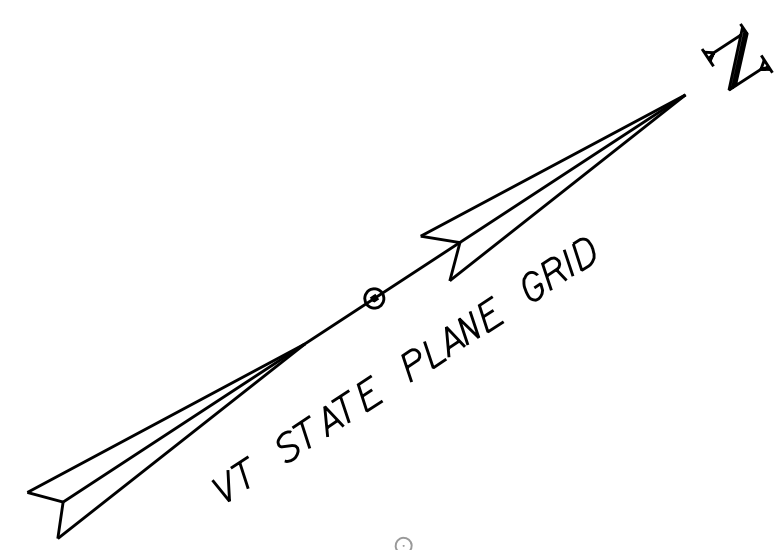
SOIL INFORMATION:  
SUNDAY FINE SAND  
NOT HIGHLY ERODIBLE  
K=.05



SCALE 1" = 20'-0"  
20 0 20



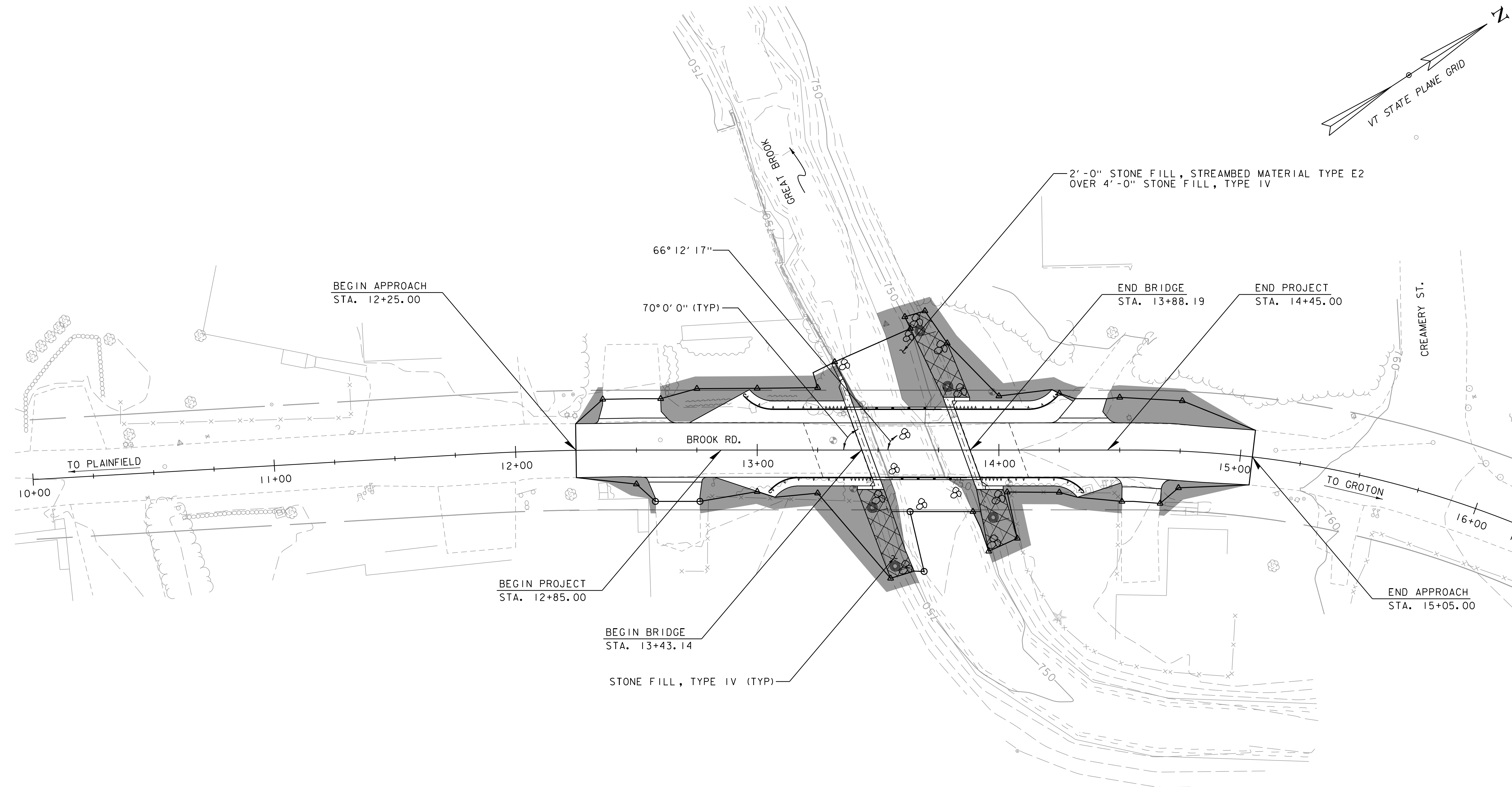
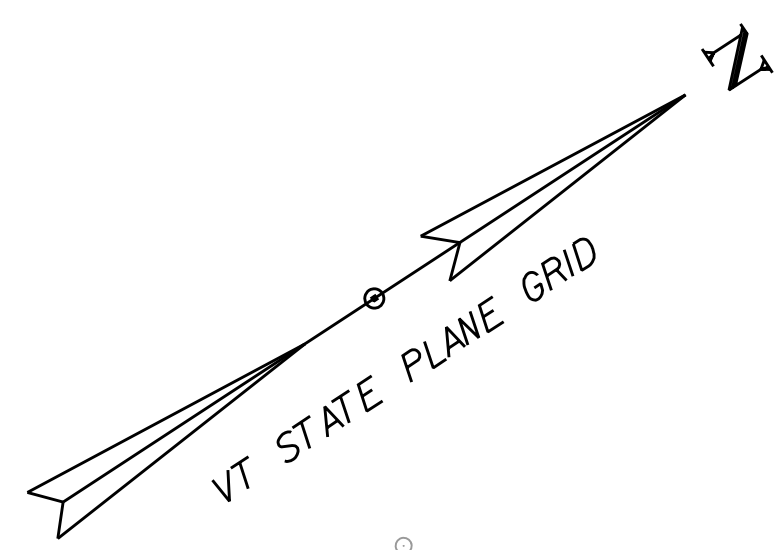
PROJECT NAME: BROOK ROAD BRIDGE	PLOT DATE: 1/6/2021
PROJECT NUMBER: 58223.00	DRAWN BY: J.D. KEENER
FILE NAME: 58223.00_BDR_ero.dgn	CHECKED BY: R.H. BARNES
PROJECT LEADER: J.D. KEENER	SHEET 35 OF 38
DESIGNED BY: J.D. KEENER	
EPSC EXISTING SITE PLAN	



SCALE 1" = 20'-0"  
 20 0 20



PROJECT NAME: BROOK ROAD BRIDGE	
PROJECT NUMBER: 58223.00	
FILE NAME: 58223.00_BDR_ero.dgn	PLOT DATE: 1/6/2021
PROJECT LEADER: J.D. KEENER	DRAWN BY: J.D. KEENER
DESIGNED BY: J.D. KEENER	CHECKED BY: R.H. BARNES
EPSC CONSTRUCTION SITE PLAN	SHEET 36 OF 38



TO PLAINFIELD

TO GROTON

CREAMERY ST.

66° 12' 17"

70° 0' 0" (TYP)

2'-0" STONE FILL, STREAMBED MATERIAL TYPE E2  
OVER 4'-0" STONE FILL, TYPE IV

BEGIN APPROACH  
STA. 12+25.00

END BRIDGE  
STA. 13+88.19

END PROJECT  
STA. 14+45.00

BROOK RD.

10+00

11+00

12+00

13+00

14+00

15+00

16+00

BEGIN PROJECT  
STA. 12+85.00

END APPROACH  
STA. 15+05.00

BEGIN BRIDGE  
STA. 13+43.14

STONE FILL, TYPE IV (TYP)

SCALE 1" = 20'-0"  
20 0 20



PROJECT NAME: BROOK ROAD BRIDGE	
PROJECT NUMBER: 58223.00	
FILE NAME: 58223.00_BDR_ero.dgn	PLOT DATE: 1/6/2021
PROJECT LEADER: J.D. KEENER	DRAWN BY: J.D. KEENER
DESIGNED BY: J.D. KEENER	CHECKED BY: R.H. BARNES
EPSC FINAL SITE PLAN	SHEET 37 OF 38

VAOT LOW GROW/FINE FESCUE MIX						
WEIGHT	LBS/AC		NAME	LATIN NAME	GERM	PURITY
	BROADCAST	HYDROSEED				
38%	57	95	CREeping RED FESCUE	FESTUCA RUBRA VAR. RUBRA	90%	98%
29%	43.5	72.5	HARD FESCUE	FESTUCA LONGIFOLIA	85%	95%
15%	22.5	37.5	CHEWINGS FESCUE	FESTUCA RUBRA VAR. COMMUTATA	87%	95%
15%	22.5	37.5	ANNUAL RYEGRASS	LOLIUM MULTIFLORUM	90%	95%
3%	4.5	7.5	INERTS			
100%	150	250				

VAOT RURAL AREA MIX						
WEIGHT	LBS/AC		NAME	LATIN NAME	GERM	PURITY
	BROADCAST	HYDROSEED				
37.5%	22.5	45	CREeping RED FESCUE	FESTUCA RUBRA VAR. RUBRA	85%	98%
37.5%	22.5	45	TALL FESCUE	FESTUCA ARUNDINACEA	90%	95%
5.0%	3	6	RED TOP	AGROSTIS GIGANTEA	90%	95%
15.0%	9	18	WHITE FIELD CLOVER	TRIFOLIUM REPENS	85%	98%
5.0%	3	6	ANNUAL RYE GRASS	LOLIUM MULTIFLORUM	85%	95%
100%	60	120				

GENERAL AMENDMENT GUIDANCE		
FERTILIZER	LIME	
10/20/10	AG LIME	PELLITIZED
500 LBS/AC	2 TONS/AC	1 TONS/AC

**CONSTRUCTION GUIDANCE**

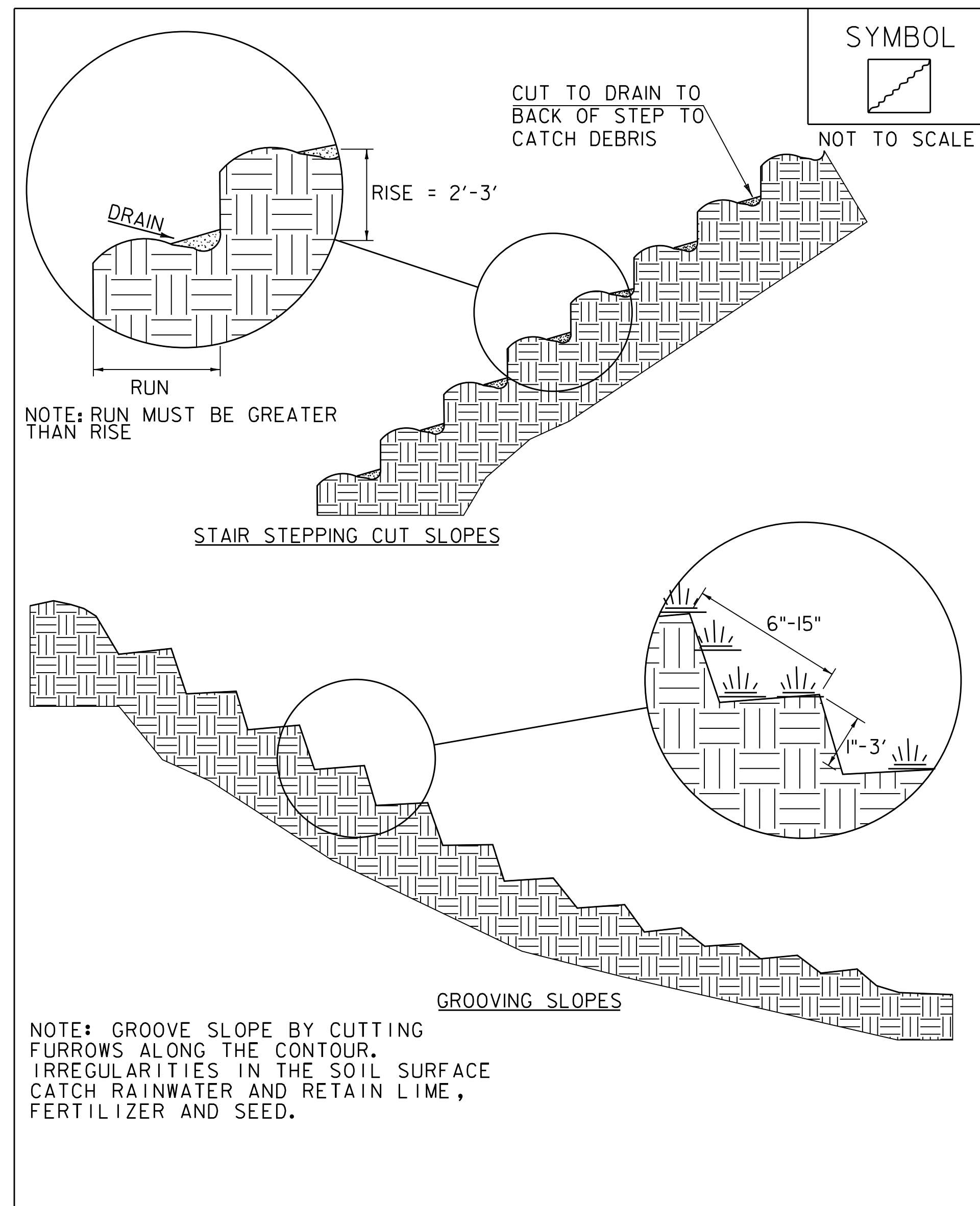
1. SEED MIX: THE CONTRACTOR SHALL COORDINATE WITH THE RESIDENT ENGINEER ON WHICH SEED MIX TO USE.
2. SEED MIX: USE AS INDICATED IN THE PLANS AND/OR FOR ALL ESTABLISHED UPLAND (NON WETLAND) AREAS DISTURBED BY THE CONTRACTOR.
3. ALL SEED MIXTURES: SHALL NOT HAVE A WEED CONTENT EXCEEDING 0.40% BY WEIGHT AND SHALL BE FREE OF ALL NOXIOUS SEED.
4. FERTILIZER AND LIMESTONE: SHALL FOLLOW RATES SHOWN ON PLAN OR AS DIRECTED BY THE ENGINEER.
5. HAY MULCH: TO BE PLACED ON EARTH SLOPES AT THE RATE OF 2 TONS/ACRE, ACHIEVE 90% GROUND COVER OR AS DIRECTED BY THE ENGINEER.
6. HYDROSEEDING: ALTHOUGH GUIDANCE IS GIVEN ABOVE THE SITE CONDITIONS AND THE TYPE OF HYDROSEED PROPOSED FOR USE WILL ULTIMATELY DICTATE THE AMOUNTS AND TYPES OF SOIL AMENDMENTS TO BE APPLIED.
7. TURF ESTABLISHMENT: PLACING SEED, FERTILIZER, LIME AND MULCH PRIOR TO SEPTEMBER 15 AND AFTER APRIL 15 CAN BETTER ENSURE A VIGOROUS GROWTH OF GRASS.

ADAPTED FROM VTRANS TECHNICAL LANDSCAPE MANUAL FOR ROADWAYS AND TRANSPORTATION FACILITIES

**TURF ESTABLISHMENT**

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 651 FOR SEED (PAY ITEM 651J5)

REVISIONS	
JANUARY 12, 2015	WHF



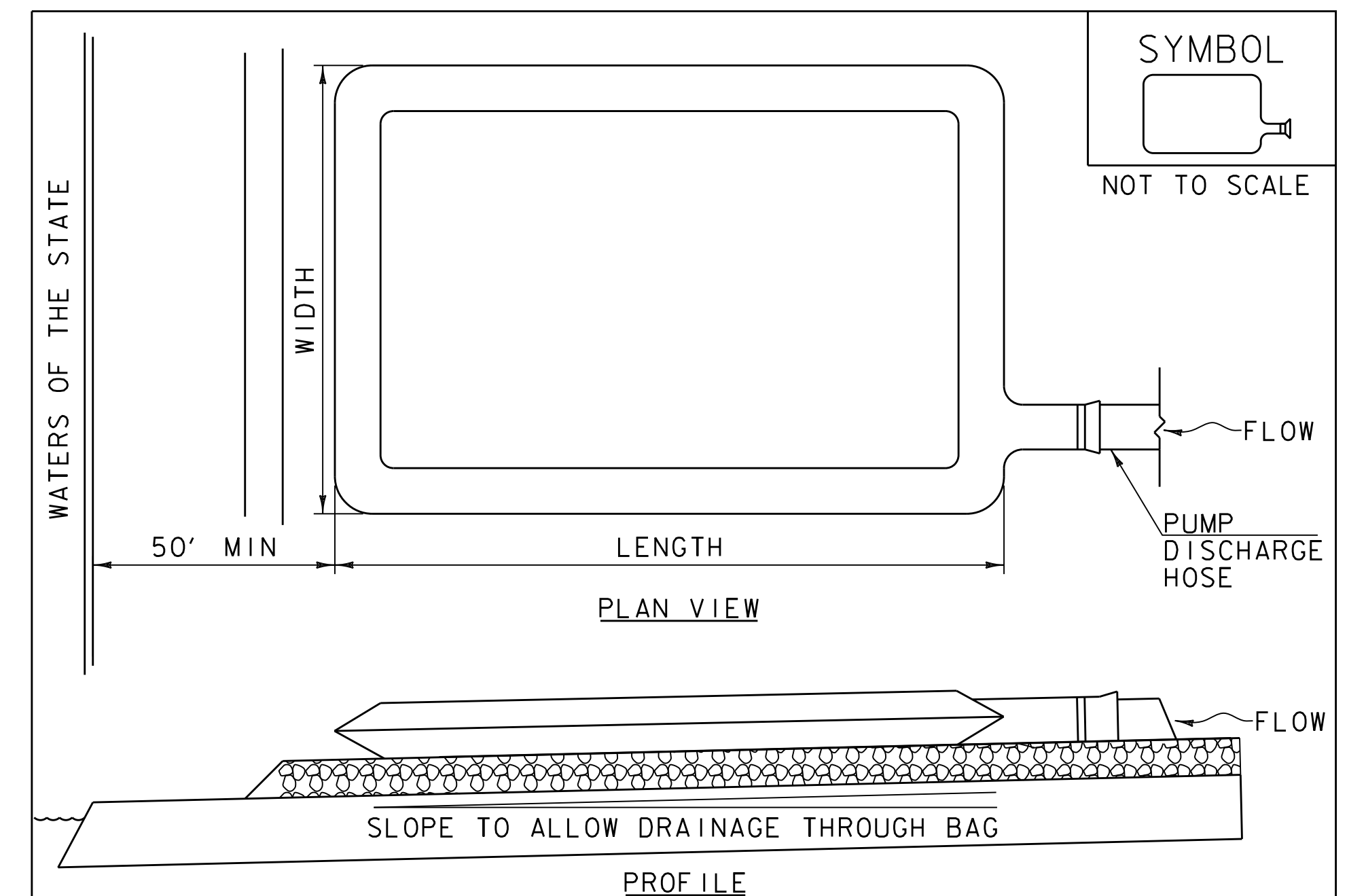
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC  
ORIGINALLY DEVELOPED BY USDA-NRCS  
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

**SURFACE ROUGHENING**

NOTES:  
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- " FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.

REVISIONS	
APRIL 1, 2008	WHF
JANUARY 13, 2009	WHF

THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT



**CONSTRUCTION SPECIFICATIONS**

1. THE PRIMARY PURPOSE OF FILTER BAG IS TO RETAIN SILT, SAND, AND FINES DURING DEWATERING OPERATIONS.
2. FILTER BAGS SHALL BE INSTALLED ON A VEGETATED SLOPE GRADED TO ALLOW INCOMING WATER TO FLOW THROUGH THE BAG.
3. FILTER BAGS MAY ALSO BE PLACED ON COARSE AGGREGATE, STONE, OR HAYBALES TO INCREASE FILTRATION EFFICIENCY.
4. FILTER BAGS SHALL BE LOCATED A MINIMUM OF 50' FROM WATERS OF THE STATE UNLESS OTHERWISE APPROVED BY THE ENGINEER.
5. THE NECK OF THE FILTER BAG SHALL BE STRAPPED TIGHTLY TO THE DISCHARGE HOSE.
6. A FILTER BAG IS FULL WHEN IT NO LONGER CAN EFFICIENTLY FILTER SEDIMENT OR ALLOW WATER TO PASS AT A REASONABLE RATE.
7. FILTER BAG SHALL BE DISPOSED OF AS APPROVED IN THE EPSC PLAN OR AS DIRECTED BY THE ENGINEER.

**FILTER BAG**

NOTES:  
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- " FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.

REVISIONS	
MARCH 24, 2008	WHF
JANUARY 13, 2009	WHF

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 FOR FILTER BAG (PAY ITEM 653.45) AND AS SPECIFIED IN THE CONTRACT.



PROJECT NAME: BROOK ROAD BRIDGE  
PROJECT NUMBER: 58223.00

FILE NAME: 58223.00_EPSC_det.dgn  
PROJECT LEADER: J.D. KEENER  
DESIGNED BY: J.D. KEENER  
EPSC DETAILS

PLOT DATE: 1/6/2021  
DRAWN BY: N.A. TRUSLOW  
CHECKED BY: J.D. KEENER  
SHEET 38 OF 38